



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

2/13/2013

Certified Mail

Sarah Harrison
Johns Manville / Plant #01 - wtv1
6050 N. River Rd.
Waterville, OH 43566

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL

Facility ID: 0448000012
Permit Number: P0112207
Permit Type: OAC Chapter 3745-31 Modification
County: Lucas

No	TOXIC REVIEW
No	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED
No	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the permit. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, Toledo Blade. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall
Permit Review/Development Section
Ohio EPA, DAPC
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, Ohio 43216-1049

and Toledo Department of Environmental Services
348 South Erie Street
Toledo, OH 43604

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified in writing if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Toledo Department of Environmental Services at (419)936-3015.

Sincerely,


Michael W. Ahern, Manager
Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA Region 5 -Via E-Mail Notification
TDES; Michigan; Indiana; Canada



Permit Strategy Write-Up

1. Check all that apply:

Synthetic Minor Determination

Netting Determination

2. Source Description:

This PTI is, in part, a Chapter 31 modification for the direct dry chop classifiers #1 & #2 (P056-P057) and the direct dry chop dryer #1 & #2 (P054-P055). The facility is requesting a combining of each classifier with its associated oven into one emission unit. These units always work in pairs and each pair emits to a common baghouse and stack. These combined emission units will be given a new number so as not to confuse them with historical emission unit information. See following table for emission unit ID changes:

New Emissions Unit ID	Old Emission Unit IDs to be combined	
	Old Direct Chop Oven ID	Old Direct Chop Classifier ID
P069	P054	P056
P070	P055	P057

The facility is also requesting the ability to shift productions of the different binder formulations between the various chop oven/classifier emission units (P045, P058, P061-P064, and P069-P070). Currently, each of the emission units has different emission limits based on the formulation run in each. The facility would like to maximize flexibility by increasing the emission limits of individual emission units so that the formulation that generates the highest emissions can be run on all the chop oven/classifier emission units. Each emission unit will be set to potential to emit based on this worst case formulation. In order to keep the emission increase below the significant threshold for PSD review, they have requested an overall emission limitation for the chop oven/classifier emission units below the significant threshold.

3. Facility Emissions and Attainment Status:

PM10, SO2 and NO2 are major sources of emissions. All other criteria pollutants are minor sources.

Pollutant	Significant Net	
	Emission Increase Levels	Attainment Status
PM2.5	250 TPY	attainment
PM10	250 TPY	attainment
SO2	250 TPY	attainment
VOC	250 TPY	attainment
NOx	250 TPY	attainment
CO	250 TPY	attainment



4. Applicable Rules/Regulations

ORC 3704.03(T)	BAT limits for emissions greater than ten tons per year based on guidance dated December 10, 2009.
OAC rule 3745-31-05(A)(3), as effective 11/30/2001	Per current guidance, BAT limits on emissions below ten tons per year will be effective until US EPA accepts SB 265 changes to SIP.
OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/1/2006	BAT limits will not be required on emissions below ten tons per year when US EPA accepts SB 265 changes to SIP.
OAC Rule 3745-17-07(A)(1)	20% opacity as a 6-minute average
OAC Rule 3745-11(B)(1)	SIP limitation for particulate emissions on process
OAC Rule 3745-18-06(E)	SIP limitation for SO ₂ emissions from natural gas oven
OAC Rule 3745-31-05(D)	The facility has requested federally enforceable emission limitations to keep emissions below PSD threshold and also to limit emissions to potential to emit on emissions that would otherwise only be limited by SIP when SB265 is accepted by US EPA.

5. Source Emissions:

The facility contains several EUs (P045, P058, P061-P064, and P069-P070) which perform the same function. They chop glass fibers, add a binder and dry the product in a natural gas oven. Up to this point, each EU had different emission limitations based on the formulation of binder processed in that EU. In order to increase the flexibility of this process, the facility would like be able to process all formulations in each EU. Each EU will have the emission limits for that EU set to potential to emit (PTE) based on the worst case formulation. Then the facility has requested an overall emission limit that encompasses all these EUs that will limit the emission increase below significant thresholds for PSD review.

Therefore this modification was evaluated for possible PSD permitting requirements. The facility had previously requested a modification to P061 – P064 that would increase emissions for PM₁₀ and VOC due to a change in binder (P0104989 issued 9/14/2009). This modification would extend that change to all the EUs. This modification would require replacing this restriction on P061 – P064 to one that encompassed all the chopper/dryer EUs. So that this modification will not be classified as a relaxation of the restriction on P061 – P064, the original evaluation performed on P061 – P064 will be re-evaluated under the same conditions and time period for the entire group of EUs (P045, P058, P061-P064 and P069-P070).

The facility chose the time period of August 2004 to July 2006 as the 24 month period for the baseline actual emissions (BAE). The records consisted of the amount of dry glass fibers that was processed through each of the classifier and dryer combinations on a monthly basis. These records, along with the emission factors in pounds of pollutant emitted per ton of glass processed (derived from annual emissions reporting data) were used to determine the BAE. The 24 months of production data were used to create a yearly average production of glass product in each emission unit. The emissions from this yearly average of the 24 months production are compared to the potential yearly emissions generated by the product with the new binders at full production. The emission factors for these new binders are based on stack test data generated in December 2006 for EUs P061 – P064. The difference between the BAE and the potential yearly emissions will be compared to the significant thresholds for PM₁₀ and VOC to determine if PSD is applicable. The following table shows the average



yearly emissions for the 24 month time period chosen by the facility (using the emissions factors from emission reporting of same time period):

Emissions Unit	Avg. Yearly Production (8/2004-7/2006) (TPY)	PM ₁₀ Emissions (TPY)	VOC Emissions (TPY)
P045	8105.90	0.25	2.73
P058	0	0	0
P061	5724.29	0.40	1.95
P062	2937.18	0.21	1.00
P063	5703.67	0.40	1.94
P064	7588.10	0.53	2.58
P069	0	0	0
P070	0	0	0
Total	30,059.14	1.79	10.20

NO_x, CO, and SO₂: PTE for each EU

The source of these emissions is the combustion of natural gas in the dryer ovens. The emissions were set to potential to emit based on AP-42 emission factors developed by US EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1 dated 7/98.

Emission Unit	Maximum Heat Input (mmBtu/hr)	NO _x emissions		CO emissions		SO ₂ emissions	
		(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
P045	2.0	0.20	0.88	0.17	0.75	0.001	0.01
P058	2.0	0.20	0.88	0.17	0.75	0.001	0.01
P061	2.0	0.20	0.88	0.17	0.75	0.001	0.01
P062	2.0	0.20	0.88	0.17	0.75	0.001	0.01
P063	2.0	0.20	0.88	0.17	0.75	0.001	0.01
P064	2.0	0.20	0.88	0.17	0.75	0.001	0.01
P069	3.0	0.30	1.32	0.25	1.10	0.001	0.01
P070	3.0	0.30	1.32	0.25	1.10	0.001	0.01
Total			7.92		6.70		0.08

PE, PM₁₀, and VOC: PTE for each EU

The source of these emissions is primarily from the addition and drying of binder. The emissions are based on the maximum production rate of EU as reported by facility. The emission factors are derived from stack testing performed in December 2006 with the worst case formulation in P061 through P064. P045 will require further stack testing to verify emission factors since this EU uses a wet scrubber and the other EUs use a bag house for particulate control.

Emission Unit	Max Production Rate (lb/hr)	PE emissions EF		PM ₁₀ emissions EF		VOC emissions EF	
		(lb/ton glass)	(ton/yr)	(lb/ton glass)	(ton/yr)	(lb/ton glass)	(ton/yr)
P045	2050	0.10	0.45	0.80	3.60	2.23	10.02
P058	2400	0.10	0.53	0.80	4.21	2.23	11.73
P061	2050	0.10	0.45	0.80	3.60	2.23	10.02



P062	1250	0.10	0.28	0.80	2.19	2.23	6.11
P063	2050	0.10	0.45	0.80	3.60	2.23	10.02
P064	1250	0.10	0.28	0.80	2.19	2.23	6.11
P069	2220	0.10	0.49	0.80	3.86	2.23	10.85
P070	2220	0.10	0.49	0.80	3.86	2.23	10.85
Total			3.42		27.15		75.71

Based on this worst case formulation, the potential emissions could exceed the calculated BAE by 25.36 TPY (27.15 – 1.79) for PM₁₀ and 65.51 TPY (75.71 – 10.20) for VOC. The significant thresholds for PSD review are 15 TPY for PM₁₀ and 40 TPY for VOC. Therefore an increase based on PTE would require PSD review. In order to avoid PSD review, the facility has requested a federally enforceable restriction to limit the increase below the significant threshold for PSD review. The federally enforceable limits for PM₁₀ and VOC were calculated by limiting the increase, above BAE, below the PSD threshold as follows:

Pollutant	BAE (TPY)	PSD Threshold (TPY)	Federally Enforceable Limit (TPY)
PM ₁₀	1.79	15	1.79+14.90=16.69
VOC	10.20	40	10.20+39.90=50.10

In order to verify these limitations are met, a formula was developed to track the PM₁₀ and VOC emissions on a rolling, 12-month period from the combined EUs (P045, P058, P061-P064, and P069-P070). On a monthly basis, the facility will calculate a running total of amount of glass product dried with each binder formulation times the emission factor for that formulation derived from stack test data. This running total will be compared with the federally enforceable restrictions to verify compliance as follows:

$$16.69 \text{ tons PM}_{10} \geq \sum_{i=1}^n (Q_i)(EF(\text{PM}_{10})_i) \div 2000 \text{ pounds/ton}$$

$$50.10 \text{ tons VOC} \geq \sum_{i=1}^n (Q_i)(EF(\text{VOC})_i) \div 2000 \text{ pounds/ton}$$

Where:

Q_i = amount of glass for a specific formulation dried in emission units P045, P058, P061-P064, P069, and P070 for the current month and the previous 11 months i, tons

EF(PM₁₀)_i = emission factor derived from stack test that matches formulation of glass dried i, pounds PM₁₀ per ton of glass dried.

EF(VOC)_i = emission factor derived from stack test that matches formulation of glass dried i, pounds VOC per ton of glass dried.

n = number of formulations of glass dried in emission units P045, P058, P061-P064, P069, and P070

PE & SO₂ emissions – facility requested restriction

The PE and SO₂ emissions were set to PTE as a facility requested restriction. These emissions would otherwise be set to SIP limits when SB265 is approved by USEPA since they are less than ten tons per year. The SIP limit would indicate a much larger emissions limit than the EUs are capable of emitting. In order to minimize the allowable emissions the facility is taking a restriction based on PTE. See below for a comparison between these values and SIP values:



Emissions Unit	PE (lbs/hr)		SO ₂ (lbs/hr)	
	SIP Limit	31-05(D) Limit	SIP Limit	31-05(D) Limit
P045	4.17	0.45	30.51	0.0012
P058	4.64	0.53	33.90	0.0012
P061	4.17	0.45	30.51	0.0012
P062	3.00	0.28	21.90	0.0012
P063	4.17	0.45	30.51	0.0012
P064	3.00	0.28	31.90	0.0012
P069	4.40	0.49	32.18	0.0018
P070	4.40	0.49	32.18	0.0018

6. Conclusion:

This modification to the fiberglass classifier/dryer EUs will increase the flexibility of production for the facility. This will become important as one of the glass furnaces (P013) will be down for rebuild and production can be shifted to the EUs fed by the other glass furnace (P001). This modification will allow the higher emission formulations to be produced on all the EUs. To limit this potential increase in emissions, the facility has requested a federally enforceable restriction on the overall emissions for these EUs, which will keep them below PSD significant thresholds. It is recommended this permit be issued draft/final.

7. Please provide additional notes or comments as necessary:

None

8. Total Permit Allowable Emissions Summary (for informational purposes only):

<u>Pollutant</u>	<u>Tons Per Year</u>
NO _x	7.92
CO	6.70
SO ₂	0.08
PE	3.42
PM ₁₀	16.69
VOC	50.10

PUBLIC NOTICE
Issuance of Draft Air Pollution Permit-To-Install
Johns Manville / Plant #01 - wtv1

Issue Date: 2/13/2013

Permit Number: P0112207

Permit Type: OAC Chapter 3745-31 Modification

Permit Description: Modification of fiberglass classifier/drying oven combination emission units to allow use of all formulations in each emission unit with an overall federally enforceable limitation.

Facility ID: 0448000012

Facility Location: Johns Manville / Plant #01 - wtv1
6050 River Road,
Waterville, OH 43566

Facility Description: Other Pressed and Blown Glass and Glassware Manufacturing

The Director of the Ohio Environmental Protection Agency issued the draft permit above. The permit and complete instructions for requesting information or submitting comments may be obtained at: <http://epa.ohio.gov/dapc/permitsonline.aspx> by entering the permit # or: Brad Faggionato, Toledo Department of Environmental Services, 348 South Erie Street, Toledo, OH 43604. Ph: (419)936-3015



DRAFT

**Division of Air Pollution Control
Permit-to-Install
for
Johns Manville / Plant #01 - wtv1**

Facility ID:	0448000012
Permit Number:	P0112207
Permit Type:	OAC Chapter 3745-31 Modification
Issued:	2/13/2013
Effective:	To be entered upon final issuance



Division of Air Pollution Control
Permit-to-Install
for
Johns Manville / Plant #01 - wtv1

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Draft Permit-to-Install
Johns Manville / Plant #01 - wtv1
Permit Number: P0112207
Facility ID: 0448000012

Effective Date: To be entered upon final issuance

Authorization

Facility ID: 0448000012
Facility Description: Fiber Glass Manufacturer
Application Number(s): A0046255, A0046587
Permit Number: P0112207
Permit Description: Modification of fiberglass classifier/drying oven combination emission units to allow use of all formulations in each emission unit with an overall federally enforceable limitation.
Permit Type: OAC Chapter 3745-31 Modification
Permit Fee: \$2,000.00 *DO NOT send payment at this time, subject to change before final issuance*
Issue Date: 2/13/2013
Effective Date: To be entered upon final issuance

This document constitutes issuance to:

Johns Manville / Plant #01 - wtv1
6050 River Road
Waterville, OH 43566

of a Permit-to-Install for the emissions unit(s) identified on the following page.

Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Toledo Department of Environmental Services
348 South Erie Street
Toledo, OH 43604
(419)936-3015

The above named entity is hereby granted a Permit-to-Install for the emissions unit(s) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Scott J. Nally
Director



Authorization (continued)

Permit Number: P0112207

Permit Description: Modification of fiberglass classifier/drying oven combination emission units to allow use of all formulations in each emission unit with an overall federally enforceable limitation.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	P045
Company Equipment ID:	Gypsum Line Oven with wet scrubber control
Superseded Permit Number:	P0105875
General Permit Category and Type:	Not Applicable

Emissions Unit ID:	P058
Company Equipment ID:	P058
Superseded Permit Number:	P0107133
General Permit Category and Type:	Not Applicable

Group Name: Direct Chop Oven and Classifier

Emissions Unit ID:	P061
Company Equipment ID:	Direct Chop Oven and Classifier #1 Leg #5
Superseded Permit Number:	P0106573
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P063
Company Equipment ID:	Direct Chop Oven & Classifier #3
Superseded Permit Number:	P0106573
General Permit Category and Type:	Not Applicable

Group Name: Direct Chop Oven and Classifier

Emissions Unit ID:	P069
Company Equipment ID:	P069
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P070
Company Equipment ID:	P070
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

Group Name: Direct Chop Oven and Classifier

Emissions Unit ID:	P062
Company Equipment ID:	Direct Chop Oven & Classifier #2
Superseded Permit Number:	P0106573
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P064
Company Equipment ID:	Direct Chop Oven & Classifier #4
Superseded Permit Number:	P0106573
General Permit Category and Type:	Not Applicable



Draft Permit-to-Install
Johns Manville / Plant #01 - wtv1
Permit Number: P0112207
Facility ID: 0448000012
Effective Date: To be entered upon final issuance

A. Standard Terms and Conditions



1. Federally Enforceable Standard Terms and Conditions

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
- (1) Standard Term and Condition A.2.a), Severability Clause
 - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
 - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
 - (4) Standard Term and Condition A.9., Reporting Requirements
 - (5) Standard Term and Condition A.10., Applicability
 - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
 - (7) Standard Term and Condition A.14., Public Disclosure
 - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
 - (9) Standard Term and Condition A.16., Fees
 - (10) Standard Term and Condition A.17., Permit Transfers

2. Severability Clause

- a) A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

3. General Requirements

- a) The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification.



- b) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c) This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d) This permit does not convey any property rights of any sort, or any exclusive privilege.
- e) The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

4. Monitoring and Related Record Keeping and Reporting Requirements

- a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
 - (1) The date, place (as defined in the permit), and time of sampling or measurements.
 - (2) The date(s) analyses were performed.
 - (3) The company or entity that performed the analyses.
 - (4) The analytical techniques or methods used.
 - (5) The results of such analyses.
 - (6) The operating conditions existing at the time of sampling or measurement.
- b) Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
 - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Toledo Department of Environmental Services.



- (2) Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the Toledo Department of Environmental Services. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.
 - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the Toledo Department of Environmental Services every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
 - (4) This permit is for an emissions unit located at a Title V facility. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the Toledo Department of Environmental Services in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

6. Compliance Requirements

- a) The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.
- b) Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.



- c) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
 - (1) At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
 - (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
 - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - (4) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- d) The permittee shall submit progress reports to the Toledo Department of Environmental Services concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
 - (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - (2) An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

7. Best Available Technology

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

8. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

9. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Toledo Department of Environmental Services.
- b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission



limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Toledo Department of Environmental Services. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

10. Applicability

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

11. Construction of New Sources(s) and Authorization to Install

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.
- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in Ohio EPA's "Air Services" along with the date the emissions unit(s) was permanently



removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).

- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

No emissions unit certified by the authorized official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

12. Permit-To-Operate Application

The permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77. The permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

13. Construction Compliance Certification

The applicant shall identify the following dates in the online facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.



15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly (i.e., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

16. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

17. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in Air Services once the transfer is legally completed. The change must be submitted through Air Services within thirty days of the ownership transfer date.

18. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

19. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.



Draft Permit-to-Install
Johns Manville / Plant #01 - wtv1
Permit Number: P0112207
Facility ID: 0448000012
Effective Date: To be entered upon final issuance

B. Facility-Wide Terms and Conditions



Draft Permit-to-Install
Johns Manville / Plant #01 - wtv1
Permit Number: P0112207
Facility ID: 0448000012

Effective Date: To be entered upon final issuance

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
 - a) None.



Draft Permit-to-Install
Johns Manville / Plant #01 - wtv1
Permit Number: P0112207
Facility ID: 0448000012
Effective Date: To be entered upon final issuance

C. Emissions Unit Terms and Conditions



1. P045, Gypsum Line Oven with web scrubber control

Operations, Property and/or Equipment Description:

Gypsum Line Oven (9212 Leg 4) with wet scrubber control

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T)	Volatile organic compound (VOC) emissions shall not exceed 2.23 pounds per ton of glass dried.
b.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001	Carbon monoxide (CO) shall not exceed 0.17 pound per hour and 0.75 ton per year.
		Nitrogen oxides (NO _x) shall not exceed 0.20 pound per hour and 0.88 ton per year.
		See b)(2)a through b)(2)d.
c.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (VE) shall not exceed 20% opacity as a 6-minute average.
d.	OAC rule 3745-17-11(B)(1)	See b)(2)f.
e.	OAC rule 3745-18-06(E)	See b)(2)f.
f.	OAC rule 3745-31-05(D)	Filterable particulate emissions (PE) shall not exceed 0.45 ton per rolling, 12-month period.
		Particulate matter less than 10 microns (PM ₁₀) shall not exceed 3.60 tons per rolling, 12-month period.
		Sulfur dioxide (SO ₂) emissions shall not exceed 0.01 ton per rolling, 12-month period. See b)(2)c.
		See b)(2)e.
g..	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/1/2006	See b)(2)g. and b)(2)h.



(2) Additional Terms and Conditions

- a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutant less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the December 1, 2006 version of 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- b. The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).
- c. These emission limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limitations.
- d. Visible particulate emissions from the stack serving this emissions unit shall not exceed 10% opacity as a 6-minute average.
- e. The maximum glass dried in the combination of emissions units P045, P058, P061-P064, P069, and P070 shall be limited by either of the following formulas, calculated as a rolling, 12-month summation:

$$16.69 \text{ tons PM}_{10} \geq \sum_{i=1}^n (Q_i)(EF(\text{PM}_{10})_i) \div 2000 \text{ pounds/ton}$$

$$50.10 \text{ tons VOC} \geq \sum_{i=1}^n (Q_i)(EF(\text{VOC})_i) \div 2000 \text{ pounds/ton}$$

Where:

Q_i = total amount of glass for a specific formulation dried in emission units P045, P058, P061-P064, P069, and P070 for the current month and the previous 11 months, tons

$EF(\text{PM}_{10})_i$ = control specific emission factor derived from stack test that matches formulation of glass dried i , pounds PM_{10} per ton of glass dried.

$EF(\text{VOC})_i$ = control specific emission factor derived from stack test that matches formulation of glass dried i , pounds VOC per ton of glass dried.

n = number of formulations of glass dried in emission units P045, P058, P061-P064, P069, and P070



- f. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
- g. This rule paragraph applies once the U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan (SIP).

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO_x, SO₂ and CO emissions from this air contaminant source since the uncontrolled potential to emit for NO_x, SO₂ and CO is each less than 10 tons per year.

- h. This rule paragraph applies once the U.S. EPA approves the December 1, 2006 version of the OAC rule 3745-31-05 as part of the SIP.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE and PM₁₀ emissions from this air contaminant source since the calculated annual emission rate for PE and PM₁₀ is each less than 10 tons per year, taking into account the wet scrubber required by the operational restriction.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas as fuel in this emissions unit.
- (2) The permittee shall employ the wet scrubber whenever this emissions unit is in operation.
- (3) The pressure drop across the scrubber shall be continuously maintained at the range established during the last emission test demonstrating compliance, while the emissions unit is in operation.
- (4) The scrubber water flow rate shall be continuously maintained at a value not less than the value established during the last emission test demonstrating compliance, while the emissions unit is in operation.

d) Monitoring and/or Recordkeeping Requirements

- (1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- (2) The permittee shall properly 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.



- (3) The permittee shall collect and record the following information a minimum of once during each 8-hour shift:
 - a. the pressure drop across the scrubber, in inches of water;
 - b. the scrubber water flow rate, in gallons per minute; and
 - c. the operating times for the capture (collection) system, control device, monitoring equipment, and this emissions unit.
- (4) The permittee shall maintain records, on a monthly basis, of the throughput of glass dried for each formulation, in tons, for this emissions unit as a rolling, 12-month summation.
- (5) The permittee shall maintain records, on a monthly basis, of the PM₁₀ and VOC emissions (in tons) for the combined emissions units P045, P058, P061-P064, P069, and P070 as a rolling, 12-month summation per the formula in b)(2)e of this emissions unit.
- (6) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emissions incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emissions incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.



e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify any exceedance of the rolling, 12-month summation for the PM₁₀ or VOC emissions limits for the combined emissions units P045, P058, P061-P064, P069, and P070.
- (3) The permittee shall submit quarterly deviation (excursion) reports that identify any periods of time during which the scrubber was not operating when the emission unit was operating, as well as, any deviations from the operating parameters as defined in c)(3) and c)(4). The report shall include date, time of outage or deviation, the amount of deviation, and what was done to correct the problem.
- (4) The permittee shall submit semiannual written reports that identify:
 - a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and
 - b. any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the Toledo Division of Environmental Services) by January 31 and July 31 of each year and shall cover the previous 6-month period.

- (5) If no exceedances occurred during the quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that period.
- (6) The deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.
- (7) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:
 - 10% opacity as a 6-minute average
 - 20% opacity as a 6-minute average



Applicable Compliance Method:

If required, compliance shall be demonstrated based upon visible emission observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A, using methods and procedures specified in OAC rule 3745-17-03(B)(1); or other U.S. EPA approved test method, with prior approval from the Ohio EPA.

b. Emission Limitation:

0.17 pound of CO per hour

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1, dated 7/98, as follows: divide the emission factor of 84 pounds of CO emissions per million standard cubic feet (MMscf) by a heating value of 1,020 Btu per standard cubic foot and multiply the result by the maximum heat input capacity of 2 MMBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 10 of 40 CFR Part 60 Appendix A, or other U.S. EPA-approved test method, with prior approval from the Ohio EPA.

c. Emission Limitation:

0.75 ton of CO per year

Applicable Compliance Method:

This emission limitation was developed by multiplying the allowable hourly CO emission limitation by the maximum annual hours of operation (8,760 hours per year), and then dividing by 2000 pounds per ton. Therefore, if compliance is shown with the hourly limitation, compliance shall also be shown with the annual emission limitation.

d. Emission Limitation:

0.20 pound of NO_x per hour

Applicable Compliance Method:

Compliance may be determined through calculations based on emission factors specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1, dated 7/98, as follows: divide the emission factor of 100 pounds of NO_x emissions per MMscf by a heating value of 1,020 Btu per standard cubic foot and multiply the result by the maximum heat input capacity of 2 MMBtu per hour.



If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 7 of 40 CFR Part 60 Appendix A, or other U.S. EPA-approved test method, with prior approval from the Ohio EPA.

e. Emission Limitation:

0.88 ton of NO_x per year

Applicable Compliance Method:

This emission limitation was developed by multiplying the allowable hourly NO_x emission limitation by the maximum annual hours of operation (8760 hours per year), and then dividing by 2000 pounds per ton. Therefore, if compliance is shown with the hourly limitation, compliance shall also be shown with the annual emission limitation.

f. Emission Limitation:

0.45 ton of PE per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was developed by multiplying the emission factor for the worst case product determined during the most recent stack test which demonstrated compliance with this emission limitation (0.10 pounds PE per ton of glass dried per stack test of similar unit dated December 8, 2006) by the maximum throughput of glass fibers for this emissions unit (8979 tons per year) then divided by 2000 pounds per ton.

g. Emission Limitation:

3.60 tons of PM₁₀ per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was developed by multiplying the emission factor for the worst case product determined during the most recent stack test which demonstrated compliance with this emission limitation for PM₁₀ (0.80 pounds PM₁₀ per ton of glass dried per stack test of similar unit dated December 8, 2006) by the maximum throughput of glass fibers for this emissions unit (8979 tons per year) then divided by 2000 pounds per ton.

h. Emission Limitation:

0.01 ton of SO₂ per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was developed by a one-time calculation of the potential to emit. The calculation was based on emissions factors developed from US



EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 0.6 pound of SO₂ emissions per million standard cubic feet by a heating value of 1020 Btu per standard cubic foot and multiply by the maximum heat input capacity of 2.0 MMBtu per hour and then multiply by 8,760 hours per year and divide by 2000 pounds per ton.

i. Emission Limitation:

2.23 pounds of VOC per ton of glass dried

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 25 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-21-10, or other U.S. EPA-approved test method, with prior approval from the Ohio EPA.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted to establish an emission factor for each formulation of glass dried and when required by the Toledo Division of Environmental Services or Ohio EPA Central Office.
- b. The emission testing shall be conducted to demonstrate compliance with the PM₁₀& VOC emission limitation. The testing shall be used to establish a pressure drop range and scrubber water flow rate for normal operating conditions of the wet scrubber, assuming compliance is demonstrated.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass rate(s): For PM₁₀, Methods 201 and 202 of 40 CFR Part 51, Appendix M. For VOC, Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA approved test methods may be used with prior approval from Ohio EPA.
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
- e. The 3-hour average process weight rate, in tons of glass dried per hour, shall be determined during the stack testing to allow a determination of an emission factor in pounds of regulated pollutant per ton of glass dried.
- f. The permittee shall record pressure drop across the scrubber and the scrubber water flow rate during each test run.



- g. The test report shall include a description of the glass formulation that was being produced during the test.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Toledo Division of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Toledo Division of Environmental Services or Ohio EPA Central Office's refusal to accept the results of the emission test(s).

Personnel from the Toledo Division of Environmental Services or Ohio EPA Central Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or performance of the control equipment.

A comprehensive written report of the results of the emissions test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Toledo Division of Environmental Services or the Ohio EPA Central Office.

g) Miscellaneous Requirements

- (1) None.



2. P058, Finishing Gypsum Dryer – 1 with baghouse control

Operations, Property and/or Equipment Description:

2.0 MMBtu per hour Finishing Gypsum Dryer-1 with baghouse control

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T)	Volatile organic compound (VOC) emissions shall not exceed 2.23 pounds per ton of glass dried.
b.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001	Nitrogen oxides (NO _x) shall not exceed 0.20 pound per hour and 0.88 ton per year. Carbon monoxide (CO) shall not exceed 0.17 pound per hour and 0.75 ton per year. See b)(2)a., b)(2)b. and b)(2)g.
c.	OAC rule 3745-31-05(D) (PTI 04-01462 issued 5/22/2007)	Particulate emissions (PE) shall not exceed 0.53 ton per rolling, 12-month period. Particulate matter emission of less than or equal to 10 microns in diameter (PM ₁₀) shall not exceed 4.21 tons per rolling, 12-month period. Sulfur dioxide (SO ₂) emissions shall not exceed 0.01 ton per rolling, 12-month period. See b)(2)a. See b)(2)c. and b)(2)h.
d.	OAC rule 3745-17-07(A)(1)	Visible PE from this emissions unit shall not exceed 20% opacity as a six minute average unless otherwise specified by the rule.



Effective Date: To be entered upon final issuance

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)(1)	See b)(2)d.
f.	OAC rule 3745-18-06(E)	See b)(2)d.
g.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/1/2006	See b)(2)e. and b)(2)f.

(2) Additional Terms and Conditions

- a. These emission limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limitations.
- b. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1) and OAC rule 3745-31-05(D).
- c. The permittee shall install, calibrate, maintain, and continuously operate a bag leak detection system.
 - i. A triboelectric bag leak detection system shall be installed, operated, adjusted, and maintained in a manner consistent with the U.S. Environmental Protection Agency guidance, "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997). Other bag leak detection systems including, but not limited to, devices using light scattering and other effects, shall be installed, operated, adjusted, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.
 - ii. The bag leak detection system shall be certified by the manufacturer to be capable of detecting PE emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.
 - iii. The bag leak detection system sensor shall produce an output of relative particulate emissions loading, and the permittee shall continuously monitor and record the output signal from the sensor.
 - iv. The bag leak detection system shall be equipped with an alarm system that will sound automatically when an increase in relative PE emissions over a preset level is detected and the alarm shall be located such that it can be heard by the appropriate plant personnel.
 - v. The bag leak detection system shall be installed downstream of the baghouse. Where multiple bag leak detection systems are required, the system instrumentation and alarm may be shared among the monitors.



- vi. Initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.
 - vii. Following the initial adjustment, the permittee shall not adjust the range, averaging period, alarm setpoints, or alarm delay time except as detailed in the operations, maintenance and monitoring plan. In no event shall the range be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless a responsible official certifies, by written report, that the baghouse has been inspected and found to be in good operating condition.
- d. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
 - e. This rule paragraph applies once the U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan (SIP).

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO_x, SO₂ and CO emissions from this air contaminant source since the uncontrolled potential to emit for NO_x, SO₂ and CO is each less than 10 tons/year.

- f. This rule paragraph applies once the U.S. EPA approves the December 1, 2006 version of the OAC rule 3745-31-05 as part of the SIP.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE and PM₁₀ emissions from this air contaminant source since the calculated annual emission rate for PE and PM₁₀ is each less than 10 tons/year, taking into account the baghouse required by the operational restriction.

- g. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutant less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the December 1, 2006 version of 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- h. The maximum glass dried in the combination of emissions units P045, P058, P061-P064, P069, and P070 shall be limited by either of the following formulas, calculated as a rolling, 12-month summation:



$$16.69 \text{ tons PM}_{10} \geq \sum_{i=1}^n (Q_i)(EF(\text{PM}_{10})_i) \div 2000 \text{ pounds/ton}$$

$$50.10 \text{ tons VOC} \geq \sum_{i=1}^n (Q_i)(EF(\text{VOC})_i) \div 2000 \text{ pounds/ton}$$

Where:

Q_i = total amount of glass for a specific formulation dried in emission units P045, P058, P061-P064, P069, and P070 for the current month and the previous 11 months, tons

$EF(\text{PM}_{10})_i$ = control specific emission factor derived from stack test that matches formulation of glass dried i , pounds PM_{10} per ton of glass dried.

$EF(\text{VOC})_i$ = control specific emission factor derived from stack test that matches formulation of glass dried i , pounds VOC per ton of glass dried.

n = number of formulations of glass dried in emission units P045, P058, P061-P064, P069, and P070.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas in this emissions unit.
- (2) The permittee shall operate the baghouse whenever this emissions unit is in operation.
- (3) The permittee shall initiate corrective action within one hour of an alarm from the bag leak detection system and complete corrective actions in a timely manner. Example corrective actions may include:
 - a. inspecting the baghouse for air leaks, torn or broken bags or filter media, or other conditions that may cause an increase in emission,
 - b. sealing off defective bags or filter media,
 - c. replacing defective bags or filter media, or otherwise repairing the control device,
 - d. sealing off a defective baghouse compartment,
 - e. cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system, and
 - f. shutting down the process producing the particulate emissions.



d) Monitoring and/or Recordkeeping Requirements

- (1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- (2) The permittee shall maintain daily records that document any time periods when the baghouse was not in service when the emissions unit was in operation.
- (3) The permittee shall maintain records, on a monthly basis, of the throughput of glass dried for each formulation, in tons, for this emissions unit as a rolling, 12-month summation.
- (4) The permittee shall maintain records, on a monthly basis, of the PM₁₀ and VOC emissions (in tons) for the combined emissions units P045, P058, P061-P064, P069, and P070 as a rolling, 12-month summation per the formula in b)(2)h. of this emissions unit.
- (5) The permittee shall maintain records of any bag leak detection system alarms, including the date and time of the alarm, when corrective actions were initiated, the cause of the alarm, an explanation of the corrective action taken, and when the cause of the alarm was corrected.

e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify each day that the baghouse was not in service when the emissions unit was in operation.
- (3) The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which any bag leak detection system alarms were sounded. The reports shall include a summary of the date and time of the alarm(s), when corrective actions were initiated, the cause of the alarm(s), the explanation of the corrective actions taken, and when the cause of the alarm(s) was corrected.
- (4) The permittee shall submit quarterly deviation (excursion) reports that identify any exceedance of the rolling, 12-month summation for the PM₁₀ or VOC emissions limit for the combined emissions units P045, P058, P061-P064, P069, and P070.
- (5) If no exceedances occurred during the quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that period.
- (6) The deviation reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.
- (7) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.



f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

Visible Emissions shall not exceed 20% opacity, as a 6-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A and the procedures specified in OAC rule 3745-17-03(B)(1).

b. Emission Limitation:

0.20 pound of NO_x per hour

Applicable Compliance Method:

This emission limitation was developed by a one-time calculation of the potential to emit. The calculation was based on emissions factors developed by US EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1 dated 7/98, as follows: divide the emission factor of 100 pounds of NO_x emissions per million standard cubic feet (MMscf) by a heating value of 1020 Btu per standard cubic foot and multiply by the maximum heat input capacity of 2.0 MMBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 7 of 40 CFR Part 60 Appendix A, or other U.S. EPA-approved test method, with prior approval from the Ohio EPA.

c. Emission Limitation:

0.88 ton of NO_x per year

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated by multiplying the short term emissions rate of 0.20 pound of NO_x per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

d. Emission Limitation:

0.17 pound of CO per hour



Applicable Compliance Method:

This emission limitation was developed by a one-time calculation of the potential to emit. The calculation was based on emissions factors developed by US EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1 dated 7/98, as follows: divide the emission factor of 84 pounds of CO emissions per million standard cubic feet (MMscf) by a heating value of 1020 Btu per standard cubic foot and multiply by the maximum heat input capacity of 2.0 MMBtu per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 10 of 40 CFR Part 60 Appendix A, or other U.S. EPA-approved test method, with prior approval from the Ohio EPA.

e. Emission Limitation:

0.75 ton of CO per year

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated by multiplying the short term emissions rate of 0.17 pound of CO per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

f. Emission Limitation:

0.53 ton of PE per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was established to reflect the maximum allowable emissions for this emissions unit. Compliance may be demonstrated by multiplying the short term emissions rate of 0.10 pound of PE per ton of glass dried (as determined in stack test dated December 8, 2006) by maximum amount of glass dried per year (10,512 tons per year) and divide by 2,000 pounds per ton.

g. Emission Limitation:

4.21 tons of PM₁₀ per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was established to reflect the maximum allowable emissions for this emissions unit. Compliance may be demonstrated by multiplying the short term emissions rate of 0.80 pound of PM₁₀ per ton of glass dried (as determined in stack test dated December 8, 2006) by maximum amount of glass dried per year (10,512 tons per year) and divide by 2,000 pounds per ton.



h. Emission Limitation:

2.23 pounds of VOC per ton of glass dried

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 25 or 25A of 40 CFR Part 60 Appendix A, using the methods and procedures specified in OAC rule 3745-21-10; or other U.S. EPA approved test method, with prior approval of the Ohio EPA.

i. Emission Limitation:

0.01 ton of SO₂ per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was developed by a one-time calculation of the potential to emit. The calculation was based on emissions factors developed from US EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 0.6 pound of SO₂ emissions per million standard cubic feet by a heating value of 1020 Btu per standard cubic foot and multiply by the maximum heat input capacity of 2.0 MMBtu per hour and then multiply by 8,760 hours per year and divide by 2000 pounds per ton.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted to establish an emission factor for each formulation of glass dried and when required by the Toledo Division of Environmental Services or Ohio EPA Central Office.
- b. The following test method(s) shall be employed to demonstrate compliance with the allowable mass rate(s): For PM₁₀, Methods 201 and 202 of 40 CFR Part 51, Appendix M. For VOC, Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA approved test methods may be used with prior approval from Ohio EPA.
- c. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity and employing the product with the highest emissions level, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
- d. The 3-hour average process weight rate, in tons of glass dried per hour, shall be determined during the stack testing to allow a determination of an emission factor in pounds of the regulated pollutant per ton of glass dried.



- e. The test report shall include a description of the glass formulation that was being produced during the test.

No later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Toledo Division of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Toledo Division of Environmental Services or Ohio EPA Central Office's refusal to accept the results of the emission test(s).

Personnel from the Toledo Division of Environmental Services or Ohio EPA Central Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Toledo Division of Environmental Services within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Toledo Division of Environmental Services or Ohio EPA Central Office.

- g) Miscellaneous Requirements
 - (1) None.



3. Emissions Unit Group -Direct Chop Oven and Classifier: P061, P063.

EU ID	Operations, Property and/or Equipment Description
P061	Direct Chop Oven & Classifier #1 w/ baghouse
P063	Direct Chop Oven & Classifier #3 w/ baghouse

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T)	Volatile organic compound (VOC) emissions shall not exceed 2.23 pounds per ton of glass dried.
b.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001	Nitrogen oxides (NO _x) shall not exceed 0.20 pound per hour and 0.88 ton per year. Carbon monoxide (CO) shall not exceed 0.17 pound per hour and 0.75 ton per year. See b)(2)a. through b)(2)d.
c.	OAC rule 3745-17-07(A)(1)	Visible PE shall not exceed 20% opacity, as a 6-minute average unless otherwise specified by the rule.
d.	OAC rule 3745-17-11(B)(1)	See b)(2)e.
e.	OAC rule 3745-18-06(E)	See b)(2)e.
f.	OAC rule 3745-31-05(D)	Filterable particulate emissions (PE) shall not exceed 0.45 ton per rolling, 12-month period. Particulate matter emission of less than or equal to 10 microns in diameter (PM ₁₀) shall not exceed 3.60 tons per rolling, 12-month period. Sulfur dioxide (SO ₂) emissions shall not exceed 0.01 ton per rolling, 12-month period. See b)(2)a. See b)(2)f. and b)(2)g.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
g.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/1/2006	See b)(2)h. and b)(2)i.

(2) Additional Terms and Conditions

- a. These emission limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limitations.
- b. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutant less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the December 1, 2006 version of 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- c. Visible PE from the stacks serving this emissions unit shall not exceed 10% opacity, as a 6-minute average.
- d. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-31-05(D).
- e. The PE requirements established by this rule are less stringent than the requirements established under OAC rule 3745-31-05(D).
- f. The permittee shall install, calibrate, maintain, and continuously operate a bag leak detection system.
 - i. A triboelectric bag leak detection system shall be installed, operated, adjusted, and maintained in a manner consistent with the U.S. Environmental Protection Agency guidance, "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997). Other bag leak detection systems including, but not limited to, devices using light scattering and other effects, shall be installed, operated, adjusted, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.
 - ii. The bag leak detection system shall be certified by the manufacturer to be capable of detecting PE emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.



- iii. The bag leak detection system sensor shall produce an output of relative particulate emissions loading, and the permittee shall continuously monitor and record the output signal from the sensor.
 - iv. The bag leak detection system shall be equipped with an alarm system that will sound automatically when an increase in relative PE emissions over a preset level is detected and the alarm shall be located such that it can be heard by the appropriate plant personnel.
 - v. The bag leak detection system shall be installed downstream of the baghouse. Where multiple bag leak detection systems are required, the system instrumentation and alarm may be shared among the monitors.
 - vi. Initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.
 - vii. Following the initial adjustment, the permittee shall not adjust the range, averaging period, alarm set points, or alarm delay time except as detailed in the operations, maintenance and monitoring plan. In no event shall the range be increased by more than 100 percent or decreased by more than 50 percent over a 365-day period unless a responsible official certifies, by written report, that the baghouse has been inspected and found to be in good operating condition.
- g. The maximum glass dried in the combination of emissions units P045, P058, P061-P064, P069, and P070 shall be limited by either of the following formulas, calculated as a rolling, 12-month summation:

$$16.69 \text{ tons PM}_{10} \geq \sum_{i=1}^n (Q_i)(EF(\text{PM}_{10})_i) \div 2000 \text{ pounds/ton}$$

$$50.10 \text{ tons VOC} \geq \sum_{i=1}^n (Q_i)(EF(\text{VOC})_i) \div 2000 \text{ pounds/ton}$$

Where:

Q_i = total amount of glass for a specific formulation dried in emission units P045, P058, P061-P064, P069, and P070 for the current month and the previous 11 months i , tons
 $EF(\text{PM}_{10})_i$ = control specific emission factor derived from stack test that matches formulation of glass dried i , pounds PM_{10} per ton of glass dried.
 $EF(\text{VOC})_i$ = control specific emission factor derived from stack test that matches formulation of glass dried i , pounds VOC per ton of glass dried.
 n = number of formulations of glass dried in emission units P045, P058, P061-P064, P069, and P070



- h. This rule paragraph applies once the U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan (SIP).

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the CO, NO_x, and SO₂ emissions from this air contaminant source since the uncontrolled potential to emit for CO, NO_x, and SO₂ is each less than 10 tons/year.

- i. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the SIP.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE and PM₁₀ emissions from this air contaminant source since the calculated annual emission rate for PE and PM₁₀ is each less than 10 tons/year, taking into account the baghouse required by the operational restriction.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas in this emissions unit.
- (2) The permittee shall operate the baghouse whenever this emissions unit is in operation.
- (3) The permittee shall initiate corrective action within 1 hour of an alarm from a bag leak detection system and complete corrective actions in a timely manner. Example corrective actions may include:
 - a. inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other conditions that may cause an increase in emissions;
 - b. sealing off defective bags or filter media;
 - c. replacing defective bags or filter media, or otherwise repairing the control device;
 - d. sealing off a defective baghouse compartment;
 - e. cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system; and
 - f. shutting down the process producing the particulate emissions.

d) Monitoring and/or Recordkeeping Requirements

- (1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- (2) The permittee shall maintain daily records that document any time periods when the baghouse was not in service when the emissions unit was in operation.



- (3) The permittee shall maintain records, on a monthly basis, of the throughput of glass fibers for each formulation, in tons, for this emissions unit as a rolling, 12-month summation.
- (4) The permittee shall maintain records, on a monthly basis, of the PM₁₀ and VOC emissions (in tons) for the combined emissions units P045, P058, P061-P064, P069, and P070 as a rolling, 12-month summation per the formula in b)(2)g. of this emissions unit.
- (5) The permittee shall maintain records of any bag leak detection system alarms, including the date and time of the alarm, when corrective actions were initiated, the cause of the alarm, an explanation of the corrective action taken, and when the cause of the alarm was corrected.

e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which any bag leak detection system alarms were sounded. The reports shall include a summary of the date and time of the alarm(s), when corrective actions were initiated, the cause of the alarm(s), an explanation of the corrective actions taken, and when the cause of the alarm(s) was corrected.
- (3) The permittee shall submit quarterly deviation (excursion) reports that identify each day that the baghouse was not in service when the emission unit was in operation.
- (4) The permittee shall submit quarterly deviation (excursion) reports that identify any exceedance of the rolling, 12-month summation for the PM₁₀ or VOC emissions limit for the combined emissions units P045, P058, P061-P054, P069, and P070.
- (5) If no exceedances occurred during the quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that period.
- (6) The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.
- (7) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible PE shall not exceed 20% opacity, as a 6-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A, using the methods and procedures specified in OAC rule 3745-17-03(B)(1); or other U.S. EPA approved test method, with prior approval from the Ohio EPA.

b. Emission Limitation:

Visible PE shall not exceed 10% opacity, as a 6-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A, using the methods and procedures specified in OAC rule 3745-17-03(B)(1); or other U.S. EPA approved test method, with prior approval from the Ohio EPA.

c. Emission Limitation:

3.60 ton of PM₁₀ per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.80 pound of PM₁₀ per ton of glass (as determined in stack test dated December 8, 2006) by maximum amount of glass dried per year (8979 tons per year) and divide by 2,000 pounds per ton.

d. Emission Limitation:

2.23 pounds of VOC per ton of glass dried

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 25 of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-21-10, or other U.S. EPA-approved test method, with prior approval from the Ohio EPA.



e. Emission Limitation:

0.45 ton of PE per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.10 pound of PE per ton of glass (as determined in stack test dated December 8, 2006) by maximum amount of glass dried per year (8979 tons per year) and divide by 2,000 pounds per ton.

f. Emission Limitation:

0.01 ton of SO₂ per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was developed by a one-time calculation of the potential to emit. The calculation was based on emissions factors developed from US EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 0.6 pound of SO₂ emissions per million standard cubic feet by a heating value of 1020 Btu per standard cubic foot and multiply by the maximum heat input capacity of 2.0 MMBtu per hour and then multiply by 8,760 hours per year and divide by 2000 pounds per ton.

g. Emission Limitation:

0.20 pound of NO_x per hour

Applicable Compliance Method:

This emission limit which was established through calculations based on emission factors specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1 dated 7/98, as follows: divide the emission factor of 100 pounds of NO_x emissions per mmscf by a heating value of 1,020 Btu per standard cubic foot and multiply the result by the maximum heat input capacity of 2 mmBtu per hour.

If required, the permittee shall demonstrate compliance with the emission limitation through emission testing performed in accordance with Methods 1 through 4 and 7 of 40 CFR Part 60 Appendix A, or other U.S. EPA approved test method, with prior approval from the Ohio EPA.

h. Emission Limitation:

0.88 ton of NO_x per year



Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.20 pound of NO_x per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

i. Emission Limitation:

0.17 pound of CO per hour

Applicable Compliance Method:

This emissions limit was established through calculations based on emission factors specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1 dated 7/98, as follows: divide the emission factor of 84 pounds of CO emission per million standard cubic foot by a heating value of 1,020 Btu per standard cubic foot and multiply the result by the maximum heat input capacity of 2 mmBtu per hour.

If required, the permittee shall demonstrate compliance with the emission limitation through emission testing performed in accordance with Methods 1 through 4 and 10 of 40 CFR Part 60 Appendix A, or other U.S. EPA approved test method, with prior approval from the Ohio EPA.

j. Emission Limitation:

0.75 ton of CO per year

Applicable Compliance Method:

The emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.17 pound of CO per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted to establish an emission factor for each formulation of glass dried and when required by the Toledo Division of Environmental Services or Ohio EPA Central Office.
- b. The following test method(s) shall be employed to demonstrate compliance with the allowable mass rate(s): For PM₁₀, Methods 201 and 202 of 40 CFR Part 51, Appendix M. For VOC, Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA approved test methods may be used with prior approval from Ohio EPA.



- c. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity and employing the product with the highest emissions level, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
- d. The 3-hour average process weight rate, in tons of glass dried per hour, shall be determined during the stack testing to allow a determination of an emission factor in pounds of the regulated pollutant per ton of glass dried.
- e. The test report shall include a description of the glass formulation that was being produced during the test.

No later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Toledo Division of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Toledo Division of Environmental Services or Ohio EPA Central Office's refusal to accept the results of the emission test(s).

Personnel from the Toledo Division of Environmental Services or Ohio EPA Central Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Toledo Division of Environmental Services within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Toledo Division of Environmental Services or Ohio EPA Central Office.

g) Miscellaneous Requirements

- (1) None.



4. Emissions Unit Group -Direct Chop Oven and Classifier: P062, P064.

EU ID	Operations, Property and/or Equipment Description
P062	Direct Chop Oven & Classifier #2 w/ baghouse
P064	Direct Chop Oven & Classifier #4 w/ baghouse

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001	Nitrogen oxides (NO _x) shall not exceed 0.20 pound per hour and 0.88 ton per year. Carbon monoxide (CO) shall not exceed 0.17 pound per hour and 0.75 ton per year. See b)(2)a. through b)(2)d.
b.	OAC rule 3745-17-07(A)(1)	Visible PE shall not exceed 20% opacity, as a 6-minute average unless otherwise specified by the rule.
c.	OAC rule 3745-17-11(B)(1)	See b)(2)e.
d.	OAC rule 3745-18-06(E)	See b)(2)e.
e.	OAC rule 3745-31-05(D)	Filterable particulate emissions (PE) shall not exceed 0.28 ton per rolling, 12-month period. Particulate matter emission of less than or equal to 10 microns in diameter (PM ₁₀) shall not exceed 2.19 tons per rolling, 12-month period. Volatile organic compound (VOC) emissions shall not exceed 6.11 tons per rolling, 12-month period. Sulfur dioxide (SO ₂) emissions shall not exceed 0.01 ton per rolling, 12-month period. See b)(2)a. See b)(2)f. and b)(2)g.



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
f.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/1/2006	See b)(2)h. and b)(2)i.

(2) Additional Terms and Conditions

- a. These emission limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limitation.
- b. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutant less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the December 1, 2006 version of 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- c. Visible PE from the stacks serving this emissions unit shall not exceed 10% opacity, as a 6-minute average.
- d. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-31-05(D).
- e. The PE requirements established by this rule are less stringent than the requirements established under OAC rule 3745-31-05(D).
- f. The permittee shall install, calibrate, maintain, and continuously operate a bag leak detection system.
 - i. A triboelectric bag leak detection system shall be installed, operated, adjusted, and maintained in a manner consistent with the U.S. Environmental Protection Agency guidance, "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997). Other bag leak detection systems including, but not limited to, devices using light scattering and other effects, shall be installed, operated, adjusted, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.
 - ii. The bag leak detection system shall be certified by the manufacturer to be capable of detecting PE emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grain per actual cubic foot) or less.



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- iii. The bag leak detection system sensor shall produce an output of relative particulate emissions loading, and the permittee shall continuously monitor and record the output signal from the sensor.
 - iv. The bag leak detection system shall be equipped with an alarm system that will sound automatically when an increase in relative PE emissions over a preset level is detected and the alarm shall be located such that it can be heard by the appropriate plant personnel.
 - v. The bag leak detection system shall be installed downstream of the baghouse. Where multiple bag leak detection systems are required, the system instrumentation and alarm may be shared among the monitors.
 - vi. Initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.
 - vii. Following the initial adjustment, the permittee shall not adjust the range, averaging period, alarm set points, or alarm delay time. In no event shall the range be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless a responsible official certifies, by written report, that the baghouse has been inspected and found to be in good operating condition.
- g. The maximum glass dried in the combination of emissions units P045, P058, P061-P064, P069, and P070 shall be limited by either of the following formulas, calculated as a rolling, 12-month summation:

$$16.69 \text{ tons PM}_{10} \geq \sum_{i=1}^n (Q_i)(EF(\text{PM}_{10})_i) \div 2000 \text{ pounds/ton}$$

$$50.10 \text{ tons VOC} \geq \sum_{i=1}^n (Q_i)(EF(\text{VOC})_i) \div 2000 \text{ pounds/ton}$$

Where:

Q_i = total amount of glass for a specific formulation dried in emission units P045, P058, P061-P064, P069, and P070 for the current month and the previous 11 months i , tons

$EF(\text{PM}_{10})_i$ = control specific emission factor derived from stack test that matches formulation of glass dried i , pounds PM_{10} per ton of glass dried.

$EF(\text{VOC})_i$ = control specific emission factor derived from stack test that matches formulation of glass dried i , pounds VOC per ton of glass dried.

n = number of formulations of glass dried in emission units P045, P058, P061-P064, P069, and P070



- h. This rule paragraph applies once the U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan (SIP).

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the CO, NO_x, and SO₂ emissions from this air contaminant source since the uncontrolled potential to emit for CO, NO_x, and SO₂ is each less than 10 tons/year.

- i. This rule paragraph applies once the U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the SIP.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE and PM₁₀ emissions from this air contaminant source since the calculated annual emission rate for PE and PM₁₀ is each less than 10 tons/year, taking into account the baghouse required by the operational restriction.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas in this emissions unit.
- (2) The permittee shall operate the baghouse whenever this emissions unit is in operation.
- (3) The permittee shall initiate corrective action within 1 hour of an alarm from a bag leak detection system and complete corrective actions in a timely manner. Example corrective actions may include:
 - a. inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other conditions that may cause an increase in emissions;
 - b. sealing off defective bags or filter media;
 - c. replacing defective bags or filter media, or otherwise repairing the control device;
 - d. sealing off a defective baghouse compartment;
 - e. cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system; and
 - f. shutting down the process producing the particulate emissions.

d) Monitoring and/or Recordkeeping Requirements

- (1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- (2) The permittee shall maintain daily records that document any time periods when the baghouse was not in service when the emissions unit was in operation.



- (3) The permittee shall maintain records, on a monthly basis, of the throughput of glass fibers for each formulation, in tons, for this emissions unit as a rolling, 12-month summation.
- (4) The permittee shall maintain records, on a monthly basis, of the PM₁₀ and VOC emissions (in tons) for the combined emissions units P045, P058, P061-P064, P069, and P070 as a rolling, 12-month summation per the formula in b)(2)g. of this emissions unit.
- (5) The permittee shall maintain records of any bag leak detection system alarms, including the date and time of the alarm, when corrective actions were initiated, the cause of the alarm, an explanation of the corrective actions taken, and when the cause of the alarm was corrected.

e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which any bag leak detection system alarms were sounded. The reports shall include a summary of the date and time of the alarm(s), when corrective actions were initiated, the cause of the alarm(s), an explanation of the corrective actions taken, and when the cause of the alarm(s) was corrected.
- (3) The permittee shall submit quarterly deviation (excursion) reports that identify each day that the baghouse was not in service when the emission unit was in operation.
- (4) The permittee shall submit quarterly deviation (excursion) reports that identify any exceedance of the rolling, 12-month summation for the PM₁₀ or VOC emissions limit for the combined emissions units P045, P058, P061-P054, P069, and P070.
- (5) If no exceedances occurred during the quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that period.
- (6) The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.
- (7) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible PE shall not exceed 20% opacity, as a 6-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A, using the methods and procedures specified in OAC rule 3745-17-03(B)(1); or other U.S. EPA approved test method, with prior approval from the Ohio EPA.

b. Emission Limitation:

Visible PE shall not exceed 10% opacity, as a 6-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A, using the methods and procedures specified in OAC rule 3745-17-03(B)(1); or other U.S. EPA approved test method, with prior approval from the Ohio EPA.

c. Emission Limitation:

2.19 ton of PM₁₀ per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.80 pound of PM₁₀ per ton of glass (as determined in stack test dated December 8, 2006) by maximum amount of glass dried per year (5475 tons per year) and divide by 2,000 pounds per ton.

d. Emission Limitation:

6.11 tons of VOC per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 2.23 pounds of VOC per ton of glass (as determined in stack test dated December 8, 2006) by maximum amount of glass dried per year (5475 tons per year) and divide by 2,000 pounds per ton.



e. Emission Limitation:

0.28 ton of PE per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.10 pound of PE per ton of glass (as determined in stack test dated December 8, 2006) by maximum amount of glass dried per year (5475 tons per year) and divide by 2,000 pounds per ton.

f. Emission Limitation:

0.01 ton of SO₂ per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was developed by a one-time calculation of the potential to emit. The calculation was based on emissions factors developed from US EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 0.6 pound of SO₂ emissions per million standard cubic feet by a heating value of 1020 Btu per standard cubic foot and multiply by the maximum heat input capacity of 2.0 MMBtu per hour and then multiply by 8,760 hours per year and divide by 2000 pounds per ton.

g. Emission Limitation:

0.20 pound of NO_x per hour

Applicable Compliance Method:

This emissions limit was established through calculations based on emission factors specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1 dated 7/98, as follows: divide the emission factor of 100 pounds of NO_x emissions per mmscf by a heating value of 1,020 Btu per standard cubic foot and multiply the result by the maximum heat input capacity of 2 mmBtu per hour.

If required, the permittee shall demonstrate compliance with the emission limitation through emission testing performed in accordance with Methods 1 through 4 and 7 of 40 CFR Part 60 Appendix A, or other U.S. EPA approved test method, with prior approval from the Ohio EPA.

h. Emission Limitation:

0.88 ton of NO_x per year



Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emission rate of 0.20 pound of NO_x per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

i. Emission Limitation:

0.17 pound of CO per hour

Applicable Compliance Method:

This emissions limit was established through calculations based on emission factors specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1 Dated 7/98, as follows: divide the emission factor of 84 pounds of CO emissions per million standard cubic feet by a heating value of 1,020 Btu per standard cubic foot and multiply the result by the maximum heat input capacity of 2 mmBtu per hour.

If required, the permittee shall demonstrate compliance with the emission limitation through emission testing performed in accordance with Methods 1 through 4 and 10 of 40 CFR Part 60 Appendix A, or other U.S. EPA approved test method, with prior approval from the Ohio EPA.

j. Emission Limitation:

0.75 ton of CO per year

Applicable Compliance Method:

The emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated through calculations performed as follows: multiply the short term emissions rate of 0.17 pound of CO per hour by 8,760 hours per year and divide by 2,000 pounds per ton.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted to establish an emission factor for each formulation of glass dried and when required by the Toledo Division of Environmental Services or Ohio EPA Central Office.
- b. The following test method(s) shall be employed to demonstrate compliance with the allowable mass rate(s): For PM₁₀, Methods 201 and 202 of 40 CFR Part 51, Appendix M. For VOC, Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA approved test methods may be used with prior approval from Ohio EPA.



- c. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity and employing the product with the highest emissions level, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
- d. The 3-hour average process weight rate, in tons of glass dried per hour, shall be determined during the stack testing to allow a determination of an emission factor in pounds of the regulated pollutant per ton of glass dried.
- e. The test report shall include a description of the glass formulation that was being produced during the test.

No later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Toledo Division of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Toledo Division of Environmental Services or Ohio EPA Central Office's refusal to accept the results of the emission test(s).

Personnel from the Toledo Division of Environmental Services or Ohio EPA Central Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Toledo Division of Environmental Services within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Toledo Division of Environmental Services or Ohio EPA Central Office.

g) Miscellaneous Requirements

- (1) None.



5. Emissions Unit Group -Direct Chop Oven and Classifier: P069, P070.

EU ID	Operations, Property and/or Equipment Description
P069	Direct Chop Oven & Classifier #5 w/ baghouse
P070	Direct Chop Oven & Classifier #6 w/ baghouse

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T)	Volatile organic compound (VOC) emissions shall not exceed 2.23 pounds per ton of glass dried.
b.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001	Nitrogen oxides (NO _x) shall not exceed 0.30 pound per hour and 1.32 tons per year. Carbon monoxide (CO) shall not exceed 0.25 pound per hour and 1.10 tons per year. See b)(2)a. through b)(2)d.
c.	OAC rule 3745-31-05(D)	Particulate matter emission of less than or equal to 10 microns in diameter (PM ₁₀) shall not exceed 3.86 ton per rolling, 12-month period. Particulate emissions (PE) shall not exceed 0.49 ton per rolling, 12-month period. Sulfur dioxide (SO ₂) emissions shall not exceed 0.01 ton per rolling, 12-month period. See b)(2)a. See b)(2)e. and b)(2)f.
d.	OAC rule 3745-17-07(A)(1)	Visible PE from this emissions unit shall not exceed 20% opacity as a six minute average unless otherwise specified by the rule.



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)(1)	See b)(2)g.
f.	OAC rule 3745-18-06(E)	See b)(2)g.
g.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/1/2006	See b)(2)h. and b)(2)i.

(2) Additional Terms and Conditions

- a. These emission limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limitations.
- b. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1) and OAC rule 3745-31-05(D).
- c. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulations for NAAQS pollutant less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the December 1, 2006 version of 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- d. Visible particulate emissions from the stack serving this emissions unit shall not exceed 10% opacity as a 6-minute average.
- e. The permittee shall install, calibrate, maintain, and continuously operate a bag leak detection system.
 - i. A triboelectric bag leak detection system shall be installed, operated, adjusted, and maintained in a manner consistent with the U.S. Environmental Protection Agency guidance, "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997). Other bag leak detection systems including, but not limited to, devices using light scattering and other effects, shall be installed, operated, adjusted, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.
 - ii. The bag leak detection system shall be certified by the manufacturer to be capable of detecting PE emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.



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- iii. The bag leak detection system sensor shall produce an output of relative particulate emissions loading, and the permittee shall continuously monitor and record the output signal from the sensor.
 - iv. The bag leak detection system shall be equipped with an alarm system that will sound automatically when an increase in relative PE emissions over a preset level is detected and the alarm shall be located such that it can be heard by the appropriate plant personnel.
 - v. The bag leak detection system shall be installed downstream of the baghouse. Where multiple bag leak detection systems are required, the system instrumentation and alarm may be shared among the monitors.
 - vi. Initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.
 - vii. Following the initial adjustment, the permittee shall not adjust the range, averaging period, alarm set points, or alarm delay time except as detailed in the operations, maintenance and monitoring plan. In no event shall the range be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless a responsible official certifies, by written report, that the baghouse has been inspected and found to be in good operation condition.
- f. The maximum glass dried in the combination of emissions units P045, P058, P061-P064, P069, and P070 shall be limited by either of the following formulas, calculated as a rolling, 12-month summation:

$$16.69 \text{ tons PM}_{10} \geq \sum_{i=1}^n (Q_i)(EF(\text{PM}_{10})_i) \div 2000 \text{ pounds/ton}$$

$$50.10 \text{ tons VOC} \geq \sum_{i=1}^n (Q_i)(EF(\text{VOC})_i) \div 2000 \text{ pounds/ton}$$

Where:

Q_i = total amount of glass for a specific formulation dried in emission units P045, P058, P061-P064, P069, and P070 for the current month and the previous 11 months, tons
 $EF(\text{PM}_{10})_i$ = control specific emission factor derived from stack test that matches formulation of glass dried i , pounds PM_{10} per ton of glass dried.
 $EF(\text{VOC})_i$ = control specific emission factor derived from stack test that matches formulation of glass dried i , pounds VOC per ton of glass dried.
 n = number of formulations of glass dried in emission units P045, P058, P061-P064, P069, and P070



- g. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
- h. This rule paragraph applies once the U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan (SIP).

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO_x, SO₂ and CO emissions from this air contaminant source since the uncontrolled potential to emit for NO_x, SO₂ and CO is each less than 10 tons per year.

- i. This rule paragraph applies once the U.S. EPA approves the December 1, 2006 version of the OAC rule 3745-31-05 as part of the SIP.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE and PM₁₀ emissions from this air contaminant source since the calculated annual emission rate for PE and PM₁₀ is each less than 10 tons per year, taking into account the baghouse required by the operational restriction.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas in this emissions unit.
- (2) The permittee shall operate the baghouse whenever this emissions unit is in operation.
- (3) The permittee shall initiate corrective action within one hour of an alarm from the bag leak detection system and complete corrective actions in a timely manner. Example corrective actions may include:
 - a. inspecting the baghouse for air leaks, torn or broken bags or filter media, or other conditions that may cause an increase in emissions;
 - b. sealing off defective bags or filter media;
 - c. replacing defective bags or filter media,
 - d. sealing off a defective baghouse compartment;
 - e. cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system, and;
 - f. shutting down the process producing the particulate emissions.

d) Monitoring and/or Recordkeeping Requirements

- (1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.



- (2) The permittee shall maintain daily records that document any time periods when the baghouse was not in service when the emissions unit was in operation.
 - (3) The permittee shall maintain records of any bag leak detection system alarms, including the date and time of the alarm, when corrective actions were initiated, the cause of the alarm, an explanation of the corrective action taken, and when the cause of the alarm was corrected.
 - (4) The permittee shall maintain records, on a monthly basis, of the throughput of glass dried for each formulation, in tons, for this emissions unit as a rolling, 12-month summation.
 - (5) The permittee shall maintain records, on a monthly basis, of the PM₁₀ and VOC emissions (in tons) for the combined emissions units P045, P058, P061-P064, P069, and P070 as a rolling, 12-month summation per the formula in b)(2)f. of this emissions unit.
- e) Reporting Requirements
- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
 - (2) The permittee shall submit quarterly deviation (excursion) reports that identify each day that the baghouse was not in service when the emissions unit was in operation.
 - (3) The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which any bag leak detection system alarms were sounded. The reports shall include a summary of the date and time of the alarm(s), when corrective actions were initiated, the cause of the alarm(s), the explanation of the corrective actions taken, and when the cause of the alarm(s) was corrected.
 - (4) The permittee shall submit quarterly deviation (excursion) reports that identify any exceedance of the rolling, 12-month summation for the PM₁₀ or VOC emissions limit for the combined emissions units P045, P058, P061-P064, P069, and P070.
 - (5) If no exceedances occurred during the quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that period.
 - (6) The deviation reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.
 - (7) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible Emissions shall not exceed 20% opacity, as a 6-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A and the procedures specified in OAC rule 3745-17-03(B)(1).

b. Emission Limitation:

2.23 pounds of VOC per ton of glass dried.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with Methods 1 through 4 and 25 or 25A of 40 CFR Part 60 Appendix A, using the methods and procedures specified in OAC rule 3745-21-10, or other U.S. EPA approved test method, with prior approval of the Ohio EPA.

c. Emission Limitation:

0.30 pound of NO_x per hour

Applicable Compliance Method:

This emission limitation was developed by a one time calculation of the potential to emit. The calculation was based on emission factors developed by U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1 dated 7/98, as follows: divide the emission factor of 100 pounds of NO_x emissions per million standard cubic feet (MMscf) by a heating value of 1020 Btu per standard cubic foot and multiply by the maximum heat input capacity of 3.0 MMBtu per hour.

d. Emission Limitation:

1.32 tons of NO_x per year

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated by multiplying the short term emissions rate of 0.30 pound of NO_x per hour by 8760 hours per year and divide by 2000 pounds per ton.



e. Emission Limitation:

0.25 pound of CO per hour

Applicable Compliance Method:

This emission limitation was developed by a one time calculate of the potential to emit. The calculation was based on emissions factors developed by US EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-1 dated 7/98, as follows: divide the emission factor of 84 pounds of CO emission per million standard cubic feet (MMscf) by a heating value of 1020 Btu per standard cubic foot and multiply by the maximum heat input capacity of 3.0 MMBtu per hour.

f. Emission Limitation:

1.10 tons of CO per year

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit. Compliance may be demonstrated by multiplying the short term emissions rate of 0.25 pound of CO per hour by 8760 hours per year and divided by 2000 pounds per ton.

g. Emission Limitation:

3.86 ton of PM₁₀ per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was established to reflect the maximum allowable emissions for this emissions unit. Compliance may be demonstrated by multiplying the short term emissions rate of 0.8 pound of PM₁₀ per ton of glass dried (as determined in stack test dated December 8, 2006) by a maximum amount of glass dried per hour (2200 pounds per hour divided by 2000 pounds per ton) by 8760 hours per year and dividing by 2000 pounds per ton.

h. Emission Limitation:

0.49 ton of PE per rolling, 12-month period

Applicable Compliance Method:

This emission limitation was established to reflect the maximum allowable emissions for this emissions unit. Compliance may be demonstrated by multiplying the short term emissions rate of 0.10 pound of PE per ton of glass dried (as determined in stack test dated December 8, 2006) by a maximum amount of glass dried per hour (2200 pounds per hour divided by 2000 pounds per ton) by 8760 hours per year and dividing by 2000 pounds per ton.



i. Emission Limitation:

0.01 ton of SO₂ per rolling, 12-month period

Applicable Compliance Method:

The emission limitation was developed by a one time calculation of the potential to emit. The calculation was based on emissions factors developed from US EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Table 1.4-2 dated 7/98, as follows: divide the emission factor of 0.6 pound of SO₂ emissions per million standard cubic feet by a heating value of 1020 Btu per standard cubic foot and multiply by the maximum heat input capacity of 3.0 MMBtu per hour and then multiply by 8760 hours per year and divide by 2000 pounds per ton.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted to establish an emission factor for each formulation of glass dried and when required by the Toledo Division of Environmental Services or Ohio EPA Central Office.
- b. The following test method(s) shall be employed to demonstrate compliance with the allowable mass rate(s): For PM₁₀, Methods 201 and 202 of 40 CFR Part 51, Appendix M. For VOC, Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA approved test methods may be used with prior approval from Ohio EPA.
- c. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity and employing the product with the highest emissions level, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
- d. The 3-hour average process weight rate, in tons of glass dried per hour, shall be determined during the stack testing to allow a determination of an emission factor in pounds of the regulated pollutant per ton of glass dried.
- e. The test report shall include a description of the glass formulation that was being produced during the test.

No later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Toledo Division of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Toledo Division of Environmental Services or Ohio EPA Central Office's refusal to accept the results of the emission test(s).



Draft Permit-to-Install
Johns Manville / Plant #01 - wtv1
Permit Number: P0112207
Facility ID: 0448000012

Effective Date: To be entered upon final issuance

Personnel from the Toledo Division of Environmental Services or Ohio EPA Central Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Toledo Division of Environmental Services within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Toledo Division of Environmental Services or Ohio EPA Central Office.

- g) Miscellaneous Requirements
 - (1) None.