State of Ohio Environmental Protection Agency

RE: FINAL PERMIT TO INSTALL **CERTIFIED MAIL**
LUCAS COUNTY

Street Address:
122 S. Front Street
Lazarus Gov. Center **TELE:** (614) 644-3020 **FAX:** (614) 644-2329
Mailing Address:
Lazarus Gov. Center
P.O. Box 1049

Application No: 04-01414
Fac ID: 0448010066
DATE: 8/30/2005

Libbey Glass Inc.
Mike Kirchner
919 940 Ash Street
Toledo, OH 43697-0919

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, Ohio 43215

Sincerely,

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: **USEPA** **TDES**

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install	**Issue Date: 8/30/2005**
Terms and Conditions	**Effective Date: 8/30/2005**

FINAL PERMIT TO INSTALL 04-01414

Application Number:	04-01414
Facility ID:	0448010066
Permit Fee:	**$1250**
Name of Facility:	Libbey Glass Inc.
Person to Contact:	Mike Kirchner
Address:	919 940 Ash Street Toledo, OH 43697-0919

Location of proposed air contaminant source(s) [emissions unit(s)]:
940 Ash Street
Toledo, **Ohio**

Description of proposed emissions unit(s):
Installation of electric boost on G-furnace.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) 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 above described 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

Joseph P. Koncelik

Director

Part I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Permit-To-Install General Terms and Conditions

1. Monitoring and Related Recordkeeping 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:

i. The date, place (as defined in the permit), and time of sampling or measurements.

ii. The date(s) analyses were performed.

iii. The company or entity that performed the analyses.

iv. The analytical techniques or methods used.

v. The results of such analyses.

vi. 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:

i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

ii. 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 appropriate Ohio EPA District Office or local air agency. 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 B.8 below if no deviations occurred during the quarter.

iii. 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 appropriate Ohio EPA District Office or local air agency 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.

iv. If this permit is for an emissions unit located at a Title V facility, then 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.

2. 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 appropriate Ohio EPA District Office or local air agency 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).

3. 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.

4. 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.

5. Severability Clause

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.

6. 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.

7. 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.

8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any 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. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

a. 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.

b. 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:

i. 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.

ii. 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.

iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

iv. 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.

c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency 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:

i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.

ii. 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.

10. Permit-To-Operate Application

a. If 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).

b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this permit is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

11. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

12. 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.

13. Permit-To-Install

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to "installation" of "any air contaminant source" as defined in OAC rule 3745-31-01, or "modification", as defined in OAC rule 3745-31-01, of any emissions unit included in this permit.

B. State Only Enforceable Permit-To-Install General Terms and Conditions

1. Compliance Requirements

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.

2. 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 appropriate Ohio EPA District Office or local air agency.

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 appropriate Ohio EPA District Office or local air agency. 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.)

3. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder.

The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

4. Authorization To Install or Modify

If applicable, authorization to install or modify any new or existing 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 modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. 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.

5. Construction of New Sources(s)

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.

6. 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.

7. 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).

8. Construction Compliance Certification

If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) that the facility has been constructed in accordance with the permit-to-install application and the terms and conditions of the permit-to-install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

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.

C. Permit-To-Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons Per Year
CO	10.6 (0.28 increase)
NOx	190 (35.0 increase)
PE	0.87 (0.29 increase)
PM_{10}	26.9 (11.8 increase)
SO_2	85.9 (38.0 increase)
VOC	2.18 (0.51 increase)

Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

None

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment
P007 - G-Furnace (27-G)
170 tons/day glass melting furnace, natural gas fired at a maximum rate of 33,583 scf/hr, with electric boost and no control
Forehearths - natural gas fired with standard burners (17,666 scf/hr) and low-NOx burners (5,148 scf/hr)
Refiner - natural gas fired at a maximum rate of 3,375 scf/hr with low-NOx burners

Applicable Rules/Requirements		
	OAC rule 3745-18-06(E)(2)	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-21-07(B)	
OAC rule 3745-31-05(A)(3)	OAC rule 3745-21-08(B)	
	OAC rule 3745-23-06(B)	
	OAC rule 3745-31-05(A)(3)	
OAC rule 3745-31-05(C)		OAC rule 3745-17-07(B)(1)
		OAC rule 3745-17-08(B)
		OAC rule 3745-18-06(E)(2)
	OAC rule 3745-17-07(B)(1)	OAC rule 3745-21-07(B)
	OAC rule 3745-17-08(B)	OAC rule 3745-21-08(B)
	OAC rule 3745-18-06(E)(2)	OAC rule 3745-23-06(B)
	OAC rule 3745-21-07(B)	
OAC rule 3745-17-07(A)(1)	OAC rule 3745-21-08(B)	
OAC rule 3745-17-11(A)(2)	OAC rule 3745-23-06(B)	

Applicable Emissions Limitations/Control Measures		
0.20 pound of carbon monoxide (CO) per hour; 41.7 pounds of nitrogen oxides (NOx) per hour; 0.16 pound of particulate emissions (PE) per hour; 6.30 pounds of particulate matter less than 10 microns in diameter (PM_{10}) per hour; 20.8 pounds of sulfur dioxide emissions (SO_2) per hour; 0.35 pound of volatile organic compound emissions (VOC) per hour; and see section A.I.2.a.	See section A.I.2.c. See section A.I.2.d. See section A.I.2.e. See section A.I.2.d & j 0.29 pound per hour and 1.27 tons per rolling 12-month period of CO emissions; 0.17 pound per hour and 0.75 ton per rolling 12-month period of NOx emissions; 0.01 pound per hour and 0.03 ton per rolling 12-month period of PE; 0.03 pound per hour and 0.12 ton per rolling 12-month period of PM_{10} emissions; 0.01 pound per hour and 0.01 ton per rolling 12-month period of SO_2; 0.02 pound per hour and 0.08 ton per rolling 12-month period of VOC emissions; and see sections A.I.2.f and g.	1.92 pounds per hour and 8.41 tons per rolling 12-month period of CO emissions; 1.41 pounds per hour and 6.18 tons per rolling 12-month period of NOx emissions; 0.04 pound per hour and 0.20 ton per rolling 12-month period of PE; 0.18 pound per hour and 0.79 ton per rolling 12-month period of PM_{10} emissions; 0.02 pound per hour and 0.09 ton per rolling 12-month period of SO_2 emissions; 0.13 pound per hour and 0.57 ton per rolling 12-month period of VOC emissions; and see sections A.I.2.f and g.
0.88 ton per rolling, 12-month period of CO; 182.7 tons per rolling, 12-month period of NOx; 0.64 ton per rolling, 12-month period of PE 26.0 tons per rolling, 12-month period of PM_{10}; 85.8 tons per rolling, 12-month period of SO_2; and 1.53 tons per rolling, 12-month period of VOC.	See section A.I.2.c. See sections A.I.2.h See section A.I.2.c. See section A.I.2.d. See section A.I.2.e. See section A.I.2.d & j	See section A.I.2.c. See sections A.I.2.h See section A.I.2.c. See section A.I.2.d. See section A.I.2.e. See section A.I.2.d & j
See section A.I.2.b. See section A.I.2.c.		

2. Additional Terms and Conditions

2.a The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

2.b Visible particulate emissions from the stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, unless otherwise specified by the rule.

2.c The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.d The permittee shall satisfy the "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-07(B) and 3745-23-06(B) by complying with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by complying with all applicable rules.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the 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 revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.f The permittee shall allow no visible emissions of fugitive dust from any enclosure (building) surrounding this emissions unit. Visible emissions of fugitive dust through roof-mounted ventilator(s) shall not exceed 5% opacity as a 3-minute average.

2.g The hourly and annual emission limitations were established for PTI purposes to reflect the potential to emit for this emissions source at the maximum firing rate for natural gas. Therefore, it is not necessary to develop monitoring, recordkeeping and/or reporting requirements to ensure compliance with these limitations.

2.h Compliance with this rule is achieved through the exclusive combustion of natural gas.

2.i The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.j On February 14, 2005, OAC rule 3745-23-06 was rescinded; therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the U.S. EPA approves the revision to OAC rule 3745-23-06, the requirement to satisfy the "latest available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

II. Operational Restrictions

1. The permittee shall burn only natural gas as fuel in this emissions unit.

2. The rate of glass pull from this emissions unit shall not exceed 58,400 tons per rolling, 12-month period, based upon a rolling, 12-month summation of the monthly pull rates.

   To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the glass pull rates specified in the following table:

Month(s)	Maximum Allowable Cumulative Glass Pull Rate, tons
1	5,100
1-2	10,200
1-3	15,300
1-4	20,400
1-5	25,500
1-6	30,600
1-7	35,700
1-8	40,800
1-9	45,900
1-10	51,000
1-11	56,100
1-12	58,400

   After the first 12 calendar months of operation, compliance with annual glass pull rate limitation shall be based upon a rolling, 12-month summation of the monthly glass pull rates.

III. 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, quantity, and heating value in Btu/dscf of the fuel burned.

2. The permittee shall maintain daily records of:

   a. the glass pull rate, in tons/day; and
   b. the hours of operation of this emissions unit.

3. The permittee shall maintain monthly records of the following information:

   a. the glass pull rate for each month; and
   b. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the glass pull rates.

   Also, during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative glass pull rate for each calendar month.

4. 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 G-furnace stack. 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 emission incident; and
   e. any corrective actions taken to minimize or eliminate the visible emissions.

   If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission 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.

5. 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 roof ventilator 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 emission incident; and
   e. any corrective actions taken to eliminate the visible emissions.

6. The permittee shall perform daily checks, when the emissions unit is in operation, for any visible fugitive particulate emissions from building egress points (doors, windows). 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. the total duration of any visible emission incident; and
   c. any corrective actions taken to eliminate the visible emissions.

7. For emission points for which the daily checks show emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when the emissions unit is in operation). If a subsequent check of such emission point by the permittee or an Ohio EPA inspector indicates abnormal emissions, the frequency of emissions checks shall revert to daily for that emission point until such time as there are 30 consecutive operating days of normal visible emissions.

IV. 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 to the Toledo Division of Environmental Services within 30 days after the deviation occurs.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month glass pull rate limitation and, for the first 12

calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative glass pull rates. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall submit quarterly written reports which:

   a. identify all days during which any visible particulate emissions were observed from the G-furnace stack, the roof ventilator serving this emissions unit or building egress points;
   b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions from the melting furnace stack;
   c. describe any corrective actions taken to eliminate the visible particulate emissions from the roof ventilator serving this emissions unit; and
   d. describe any corrective actions taken to eliminate the visible fugitive particulate emissions from building egress points (doors, windows).

   If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

   a. Emission Limitation:

      20% opacity as a 6-minute average from the melting furnace stack

      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).

b. Emission Limitation:

0.20 pound per hour CO emissions from the melting furnace

Applicable Compliance Method:

If required, the permittee shall perform emission testing in accordance with the methods and procedures of Methods 1 through 4 and 10 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from Ohio EPA.

c. Emission Limitation:

0.88 ton per rolling, 12-month period of CO from the melting furnace

Applicable Compliance Method:

Annual emissions are based on the allowable hourly emission rate (0.20 lb/hr) multiplied by the maximum annual hours of operation (8,760 hrs/yr) and divided by 2000 lbs/ton. Therefore if compliance is shown with the hourly emission limitation, compliance is also shown with the annual emission limitation.

d. Emission Limitation:

41.7 pounds per hour NOx emissions from the melting furnace

Applicable Compliance Method:

If required, the permittee shall perform emission testing in accordance with the methods and procedures of Methods 1 through 4 and 7E of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from Ohio EPA.

e. Emission Limitation:

182.7 tons per rolling, 12-month period of NOx from the melting furnace

Applicable Compliance Method:

Annual emissions are based on the allowable hourly emission rate (41.7 lb/hr) multiplied by the maximum annual hours of operation (8,760 hrs/yr) and divided by 2000 lbs/ton. Therefore if compliance is shown with the hourly emission limitation, compliance is also shown with the annual emission limitation.

f. Emission Limitation:

6.30 pounds per hour PM_{10} emissions from the melting furnace

Applicable Compliance Method:

If required, compliance shall be demonstrated based upon the procedures specified in Methods 201 and 202 of 40 CFR Part 51, Appendix M. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA.

g. Emission Limitation:

26.0 tons per rolling, 12-month period of PM_{10} from the melting furnace

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emissions factor determined during the most recent stack test which demonstrated compliance (0.89 lb/ton of glass pulled based on a 2002 stack test of this emissions unit) by the maximum allowable glass pull rate (58,400 tons per rolling 12-month period) and divided by 2000 pounds per ton.

h. Emission Limitation:

0.16 pound per hour PE emissions from the melting furnace

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 5 of 40 CFR Part 60 Appendix A using the methods and

procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA.

i. Emission Limitation:

0.64 ton per rolling, 12-month period of PE from the melting furnace

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emissions factor determined during the most recent stack test which demonstrated compliance (0.022 lb/ton of glass pulled based on a 2002 stack test of this emissions unit) by the maximum allowable glass pull rate (58,400 tons per rolling 12-month period) and divided by 2000 pounds per ton.

j. Emission Limitation:

20.8 pounds per hour SO_2 emissions from the melting furnace

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 6C of 40 CFR Part 60 Appendix A using the methods and procedures specified in OAC rule 3745-18-04. Alternative U.S. EPA approved test methods may be used with prior approval from Ohio EPA.

k. Emission Limitation:

85.8 tons per rolling, 12-month period of SO_2 from the melting furnace

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emissions factor determined during the most recent stack test which demonstrated compliance (2.94 lb/ton of glass pulled based on a 2002 stack test of this emissions unit) by the maximum allowable glass pull rate (58,400 tons per rolling 12-month period) and divided by 2000 pounds per ton.

l. Emission Limitation:

0.35 pound per hour VOC emissions from the melting furnace

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. Use of Method 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.

m. Emission Limitation:

1.53 tons per rolling, 12-month period of VOC from the melting furnace

Applicable Compliance Method:

This emission limitation was developed by multiplying the VOC hourly emission limitation (0.35 pound per hour) by the maximum annual operating rate (8760 hrs/yr) and divided by 2000 pounds per ton. Therefore, if compliance is shown by with the hourly emission limitation, compliance is also shown with the annual emission limitation.

n. Emission Limitation:

Fugitive emissions through roof ventilator(s) shall not exceed 5% opacity as a 3-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)(3).

o. Emission Limitation:

0.29 pound per hour CO emissions from the refiner

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the CO emission factor from

AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (84 lbs/mmscf of natural gas burned) by the maximum natural gas firing rate (3.375 x 10^{-3} mmscf/hr).

p. Emission Limitation:

1.27 tons per rolling, 12-month period of CO from the refiner

Applicable Compliance Method:

This emission limitation was developed by multiplying the hourly CO emission limitation (0.29 lb/hr) by the maximum annual operating hours (8760 hrs/hr) and dividing by 2000 pounds per ton. Therefore is compliance is shown with the hourly emission limitation, compliance is also shown with the annual emission limitation.

q. Emission Limitation:

0.17 pound per hour NOx emissions from the refiner

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the NOx emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (50 lbs/mmscf of natural gas burned) by the maximum natural gas firing rate (3.375 x 10^{-3} mmscf/hr).

r. Emission Limitation:

0.75 ton per rolling, 12-month period of NOx from the refiner

Applicable Compliance Method:

This emission limitation was developed by multiplying the hourly NOx emission limitation (0.17 lb/hr) by the maximum annual operating hours (8760 hrs/yr) and dividing by 2000 pounds per ton. Therefore, if compliance is shown by the hourly emission limitation, compliance is also shown with annual emission limitation.

s. Emission Limitation:

0.03 pound per hour PM_{10} emissions from the refiner

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the PM_{10} emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (7.6 lbs/mmscf of natural gas burned) by the maximum natural gas firing rate (3.375×10^{-3} mmscf/hr).

t. Emission Limitation:

0.12 ton per rolling, 12-month period of PM_{10} from the refiner

Applicable Compliance Method:

This emission limitation was developed by multiplying the PM_{10} emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (7.6 lbs/mmscf of natural gas burned), by the maximum natural gas firing rate (3.375×10^{-3} mmscf/hr), by the maximum annual operating hours (8760 hrs/yr) and dividing by 2000 pounds per ton.

u. Emission Limitation:

0.01 pound per hour PE emissions from the refiner

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the PE emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (1.9 lbs/mmscf of natural gas burned) by the maximum natural gas firing rate (3.375×10^{-3} mmscf/hr).

v. Emission Limitation:

0.03 ton per rolling, 12-month period of PE from the refiner

Applicable Compliance Method:

This emission limitation was developed by multiplying the PE emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (1.9 lbs/mmscf of natural gas burned), by the maximum natural gas firing rate (3.375×10^{-3} mmscf/hr), by the

maximum annual operating hours (8760 hrs/yr) and dividing by 2000 pounds per ton. Therefore, if compliance is shown by the hourly emission limitation, compliance is also shown with annual emission limitation.

w. Emission Limitation:

0.01 pound per hour SO_2 emissions from the refiner

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the SO_2 emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (0.6 lb/mmscf of natural gas burned) by the maximum natural gas firing rate (3.375×10^{-3} mmscf/hr).

x. Emission Limitation:

0.01 ton per rolling, 12-month period of SO_2 from the refiner

Applicable Compliance Method:

This emission limitation was developed by multiplying the SO_2 emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (0.6 lb/mmscf of natural gas burned), by the maximum natural gas firing rate (3.375×10^{-3} mmscf/hr), by the maximum annual operating hours (8760 hrs/yr) and dividing by 2000 pounds per ton.

y. Emission Limitation:

0.02 pound per hour VOC emissions from the refiner

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the VOC emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (5.5 lbs/mmscf of natural gas burned) by the maximum natural gas firing rate (3.375×10^{-3} mmscf/hr).

z. Emission Limitation:

0.08 ton per rolling, 12-month period of VOC from the refiner

Applicable Compliance Method:

This emission limitation was developed by multiplying the VOC emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (5.5 lbs/mmscf of natural gas burned), by the maximum natural gas firing rate (3.375×10^{-3} mmscf/hr), by the maximum annual operating hours (8760 hrs/yr) and dividing by 2000 pounds per ton.

aa. Emission Limitation:

1.92 pounds per hour CO emissions from the forehearths

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the CO emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (84 lbs/mmscf of natural gas burned) by the maximum natural gas firing rate (2.2814×10^{-2} mmscf/hr).

bb. Emission Limitation:

8.41 tons per rolling, 12-month period of CO from the forehearths

Applicable Compliance Method:

This emission limitation was developed by multiplying the hourly CO emission limitation (1.92 lb/hr) by the maximum annual operating hours (8760 hrs/hr) and dividing by 2000 pounds per ton. Therefore, if compliance is shown with the hourly emission limitation, compliance is also shown with the annual emission limitation.

cc. Emission Limitation:

1.41 pounds per hour NOx emissions from the forehearths

Applicable Compliance Method:

This emissions unit includes firing natural gas with standard burners (maximum firing rate of 17,666 scf/hr) and low NOx burners (maximum firing rate of 5,148 scf/hr). Compliance shall be demonstrated by multiplying the low NOx emission

factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (50 lbs/mmscf of natural gas burned) by the maximum natural gas low NOx burner firing rate (1.7666 x 10^{-2} mmscf/hr) plus the product of the maximum standard burner firing rate (5.148 x 10^{-3} mmscf/hr) and the AP-42 emission factor for a standard natural gas fired burner (100 lbs/mmscf of natural gas burned).

dd. Emission Limitation:

6.18 tons per rolling, 12-month period of NOx from the forehearths

Applicable Compliance Method:

This emission limitation was developed by multiplying the hourly NOx emission limitation (1.41 lb/hr) by the maximum annual operating hours (8760 hrs/yr) and dividing by 2000 pounds per ton. Therefore, if compliance is shown by the short term emission limitation, compliance is also shown with annual emission limitation.

ee. Emission Limitation:

0.18 pound per hour PM_{10} emissions from the forehearths

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the PM_{10} emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (7.6 lbs/mmscf of natural gas burned) by the maximum natural gas firing rate (2.2814 x 10^{-2} mmscf/hr).

ff. Emission Limitation:

0.79 ton per rolling, 12-month period of PM_{10} from the forehearths

Applicable Compliance Method:

This emission limitation was developed by multiplying the hourly PM_{10} emission limitation (0.18 lb/hr) by the maximum annual operating hours (8760 hrs/yr) and dividing by 2000 pounds per ton. Therefore, if compliance is shown by the short term emission limitation, compliance is also shown with annual emission

limitation.

gg. Emission Limitation:

0.04 pound per hour PE emissions from the forehearths

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the PE emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (1.9 lbs/mmscf of natural gas burned) by the maximum natural gas firing rate (2.2814×10^{-2} mmscf/hr).

hh. Emission Limitation:

0.20 ton per rolling, 12-month period of PE from the forehearths

Applicable Compliance Method:

This emission limitation was developed by multiplying the hourly PE emission limitation (0.04 lb/hr) by the maximum annual operating hours (8760 hrs/yr) and dividing by 2000 pounds per ton. Therefore, if compliance is shown by the short term emission limitation, compliance is also shown with annual emission limitation.

ii. Emission Limitation:

0.02 pound per hour SO_2 emissions from the forehearths

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the SO_2 emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (0.6 lb/mmscf of natural gas burned) by the maximum natural gas firing rate (2.2814×10^{-2} mmscf/hr).

jj. Emission Limitation:

0.09 ton per rolling, 12-month period of SO_2 from the forehearths

Applicable Compliance Method:

This emission limitation was developed by multiplying the hourly SO_2 emission limitation (0.002 lb/hr) by the maximum annual operating hours (8760 hrs/yr)a nd dividing by 2000 pounds per ton. Therefore, if compliance is shown by the short term emission limitation, compliance is also shown with annual emission limitation.

kk. Emission Limitation:

0.13 pound per hour VOC emissions from the forehearths

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the VOC emission factor from AP-42 emission factor, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-1, dated 7/98 (5.5 lbs/mmscf of natural gas burned) by the maximum natural gas firing rate (2.2814×10^{-2} mmscf/hr).

ll. Emission Limitation:

0.57 ton per rolling, 12-month period of VOC from the forehearths

Applicable Compliance Method:

This emission limitation was developed by multiplying the hourly VOC emission limitation (0.019 lb/hr) by the maximum annual operating hours (8760 hrs/yr). Therefore, if compliance is shown by the short term emission limitation, compliance is also shown with annual emission limitation.

mm. Emission Limitation:

No visible emissions from any enclosure (building) surrounding this emissions unit

Applicable Compliance Method:

If required, compliance shall be determined through visible emission observations performed in accordance with Method 22 of 40 CFR Part 60, Appendix A using the methods and procedures specified in OAC rule 3745-17-03(B)(4).

2. Emission testing requirements

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 within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup with use of electric boost.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for CO, NOx, PE, PM_{10}, SO_2, and opacity from the glass melting furnace stack, and opacity from the refiner and forehearths.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

   i. CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A;

   ii. NOx: Methods 1-4 and 7E of 40 CFR Part 60, Appendix A;

   iii. PE: Methods 1-4 and 5 of 40 CFR Part 60, Appendix A;

   iv. PM_{10}: Methods 201 and 202 of 40 CFR Part 51, Appendix M;

   v. SO_2: Methods 1-4 and 6C of 40 CFR Part 60, Appendix A; and

   vi. Opacity: Method 9 of 40 CFR Part 60, Appendix A for the melting furnace stack and the roof ventilator(s) serving this emissions unit.

   Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

d. During the testing, the permittee shall record the following operational parameters for each test run: glass pull rate in tons/hr, the melting furnace natural gas firing rate in scf/hr, and the electric boost rate.

e. 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 Toledo Division of Environmental Services.

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's refusal to accept the results of the emission test(s).

Personnel from the Toledo Division of Environmental Services 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 on 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.

VI. Miscellaneous Requirements

None

Emissions Unit ID: **P007**

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P007 - G-Furnace (27-G) Melter, regenerators, stack, refiner and forehearths		

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None