

2 of 18 Pages

Facility Name: **Sterling Foundry, Inc.**

Application Number: **02-1816**

Date: **April 7, 1999**

**GENERAL PERMIT CONDITIONS**

**TERMINATION OF PERMIT TO INSTALL**

Substantial construction for installation must take place within 18 months of the effective date of this permit. 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.

**NOTICE OF INSPECTION**

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

**CONSTRUCTION OF NEW SOURCES**

The proposed source(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of Ohio Administrative Code (OAC) Rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations.

3 of 18 Pages

Facility Name: **Sterling Foundry, Inc.**

Application Number: **02-1816**

Date: **April 7, 1999**

Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install 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 applicable standards.

#### **PERMIT TO INSTALL FEE**

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

#### **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.

#### **APPLICABILITY**

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

4 of 18 Pages

Facility Name: **Sterling Foundry, Inc.**

Application Number: **02-1816**

Date: **April 7, 1999**

**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.

**PERMIT TO OPERATE APPLICATION**

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be filed no later than thirty days after commencement of operation.

**SOURCE OPERATION AFTER COMPLETION OF CONSTRUCTION**

This facility is permitted to operate each source described by this permit to install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws and regulations.

Facility Name: **Sterling Foundry, Inc.**Application Number: **02-1816**Date: **April 7, 1999**AIR EMISSION SUMMARY

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

Ohio EPA Source Number	Source Identification Description	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
F007	No. 1 no bake line: core making	PM: 0.73 pound/hour, visible emissions not to exceed 20 percent as a 3 minute average; OC: 8 pounds/hour, 40 pounds/day	3745-31-05	PM: 0.73 pound/hour and 3.2 TPY, visible emissions not to exceed 20 percent as a 3 minute average
			3745-21-07 (G)(2)	OC: 8 pounds/hour, 40 pounds/day, 7.3 TPY
			3745-17-08(B)	Exempt per 3745- 17-08(A)(1)
			3745-17-07(B)	Exempt per 3745- 17-07(B)(11)(e)
F008	No. 1B no bake line: core making	PM: 1.1 pounds/hour, visible emissions not to exceed 20 percent as a 3 minute average; OC: 8 pounds/hour, 40 pounds/day	3745-31-05	PM: 1.1 pounds/hour and 4.8 TPY, visible emissions not to exceed 20 percent as a 3 minute average
			3745-21-07 (G)(2)	OC: 8 pounds/hour, 40 pounds/day, 7.3 TPY

Facility Name: **Sterling Foundry, Inc.**Application Number: **02-1816**Date: **April 7, 1999**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal &amp; OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
F008 Cont'd			3745-17-08(B)	Exempt per 3745-17-08(A)(1)
			3745-17-07(B)	Exempt per 3745-17-07(B)(11)(e)
F009	No. 2 no bake line: mold making	PM: 1.0 pounds/hour, visible emissions not to exceed 20 percent as a 3 minute average; OC: 8 pounds/hour, 40 pounds/day	3745-31-05	PM: 1.0 pounds/hour and 4.38 TPY, visible emissions not to exceed 20 percent as a 3 minute average
			3745-21-07 (G)(2)	OC: 8 pounds/hour, 40 pounds/day, 7.3 TPY
			3745-17-08(B)	Exempt per 3745-17-08(A)(1)
			3745-17-07(B)	Exempt per 3745-17-07(B)(11)(e)
F010	No. 3 no bake line: mold making	PM: 0.47 pound/hour, visible emissions not to exceed 20 percent as a 3 minute average; OC: 8 pounds/hour, 40 pounds/day	3745-31-05	PM: 0.47 pound/hour and 2.1 TPY, visible emissions not to exceed 20 percent as a 3 minute average
			3745-21-07 (G)(2)	OC: 8 pounds/hour, 40 pounds/day, 7.3 TPY
			3745-17-08(B)	Exempt per 3745-17-08(A)(1)

Facility Name: **Sterling Foundry, Inc.**  
 Application Number: **02-1816**  
 Date: **April 7, 1999**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal &amp; OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
F010 Cont'd			3745-17-07(B)	Exempt per 3745-17-07(B)(11)(e)

SUMMARY  
 TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons/Year</u>
PM	14.5
OC	29.2

**WASTE DISPOSAL**

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

**MAINTENANCE OF EQUIPMENT**

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

**MALFUNCTION/ABATEMENT**

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the **Ohio EPA, Northeast District Office, 2110 E. Aurora Road, Twinsburg, OH 44087.**

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

8 of 18 Pages

Facility Name: **Sterling Foundry, Inc.**

Application Number: **02-1816**

Date: **April 7, 1999**

**AIR POLLUTION NUISANCES PROHIBITED**

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

**ADDITIONAL SPECIAL TERMS AND CONDITIONS**

**A. Description**

PTI 02-1816 is for the installation of two core making machines (emissions unit F007 and F008) and two mold making machines (emissions unit F009 and F010) at an iron foundry. F007 was installed in 1980; F008 and F010 were installed in 1981; F009 was installed in 1974.

**B. Monitoring/Recordkeeping Requirements**

1. The permittee shall collect and record the following information each day for emissions units F007, F009, F010:
  - a. the name and identification number of each liquid organic material employed;
  - b. the weight, in pounds or tons, of sand and liquid organic material mixed;
  - c. The number of hours of operation;
  - d. the daily organic compound emission rate (pounds) using an emission factor of 0.84 lb OC per ton of sand mixed; and,
  - e. the average hourly organic compound emission rate (d)/(c).
2. The permittee shall collect and record the following information each day for emissions units F008:
  - a. the name and identification number of each liquid organic material employed;
  - b. the weight, in pounds or tons, of sand and liquid organic material mixed;
  - c. the number of hours of operation;

- d. the daily organic compound emission rate (pounds) using an emission factor of 1.17 lbs OC per ton of sand mixed; and,
  - e. the average hourly organic compound emission rate (d)/(c).
3. 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, if a strip-chart recorder is employed, for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

**C. Reporting Requirements (F007, F008, F009, F010)**

1. The permittee shall submit deviation (excursion) reports which include the following information on these emissions units:
  - a. an identification of each day during which the average hourly organic compound emissions exceeded 8 pounds per hour, and the actual average hourly organic compound emissions for each such day; and,
  - b. an identification of each day during which the organic compound emissions exceeded 40 pounds per day, and the actual organic compound emissions for each such day.
2. The permittee shall submit required reports in the following manner:
  - a. reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA, Northeast District Office; and,
  - 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 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 Ohio EPA, Northeast District Office. 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., 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).

**D. Testing Requirements**

**1. F007 - No. 1 nobake line: core making**

a. Emission Limitation

0.73 lb PM per hour

Applicable Compliance Method

Compliance with the above limitation shall be demonstrated by using the following equation:

$$E = Ts \times 0.65 \text{ lb PM/tn sand}$$

where

E = pounds particulate matter emitted per hour

Ts = tons sand used per hour

0.65 lb PM/ tn sand is an emission factor in lbs particulate matter per ton sand processed (from Ohio EPA's document "Reasonably Available Control Measures for Fugitive Dust Sources", Table 2.7-1 for core mixing and core making)

b. Emission Limitation

3.2 tons PM per year

Applicable Compliance Method

To determine the actual emission rate for particulate matter, the following equation shall be used:

11 of 18 Pages

Facility Name: **Sterling Foundry, Inc.**

Application Number: **02-1816**

Date: **April 7, 1999**

$$E = \text{cores produced (tons per year)} \times 0.65 \text{ (lb PM/tn)} \times 1/2000 \text{ (tn/lbs)}$$

where:

E = particulate matter emissions (tns/year)  
0.65 = emission factor in lbs particulate matter per ton cores produced (from Ohio EPA's document "Reasonably Available Control Measures for Fugitive Dust Sources", Table 2.7-1 for core mixing and core making)

c. Emission Limitation

Visible emissions not to exceed 20 percent opacity on a three minute average

Applicable Compliance Method

*Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.*

d. Emission Limit

8 lbs/hr and 40 lbs/day of organic compounds

Applicable Compliance Method

Compliance with the above limitations shall be demonstrated by the recordkeeping requirements from section B.1 of these Additional Special Terms and Conditions and the following equation:

To determine the daily organic compound emission rate from this emissions unit, the following equation shall be used:

$$E = Ts \times 0.84 \text{ lb OC/tn sand}$$

where:

E = organic compound emission rate (pounds)

Ts = tons of sand mixed

Facility Name: **Sterling Foundry, Inc.**

Application Number: **02-1816**

Date: **April 7, 1999**

0.84 = organic compound emission factor (lb/tn sand), based on data provided by Delta Resins & Refractories on the Airkure resin(a furan no-bake resin system)

If the type of the resin changes, the permittee shall determine a new emission factor based on the supplier's data.

e. Emission Limit

7.3 tons per year organic compounds

Applicable Compliance Method

Compliance with the above limitation shall be demonstrated by a summation of the daily organic compound emissions and by the recordkeeping requirements from section B.1 of these Additional Special Terms and Conditions.

**2. F008 - No. 1B nobake line: core making**

a. Emission Limitation

1.1 lbs PM per hour

Applicable Compliance Method

Compliance with the above limitation shall be demonstrated by using the following equation:

$$E = Ts \times 0.65 \text{ lb PM/tn sand}$$

where

E = pounds particulate matter emitted per hour

Ts = tons sand used per hour

0.65 lb PM/ tn sand is an emission factor in lbs particulate matter per ton sand processed (from Ohio EPA's document "Reasonably Available Control Measures for Fugitive Dust Sources", Table 2.7-1 for core making and core mixing)

b. Emission Limitation

4.8 tons PM per year

Facility Name: **Sterling Foundry, Inc.**

Application Number: **02-1816**

Date: **April 7, 1999**

Applicable Compliance Method

To determine the actual emission rate for particulate matter, the following equation shall be used:

$$E = \text{cores produced (tons per year)} \times 0.65(\text{lb PM/tn}) \times 1/2000 (\text{tn/lbs})$$

where:

E = particulate matter emissions (tns/year)  
0.65 = emission factor in lbs particulate matter per ton cores produced (from Ohio EPA's document "Reasonably Available Control Measures for Fugitive Dust Sources", Table 2.7-1 for core mixing and core making)

c. Emission Limitation

Visible emissions not to exceed 20 percent opacity on a three minute average

Applicable Compliance Method

*Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.*

d. Emission Limit

8 lbs/hr and 40 lbs/day of organic compounds

Applicable Compliance Method

Compliance with the above limitations shall be demonstrated by the recordkeeping requirements from section B.2 of these Additional Special Terms and Conditions and the following equation:

To determine the daily organic compound emission rate from this emissions unit, the following equation shall be used:

$$E = Ts \times 1.17 \text{ lb OC/tn sand}$$

where:

Facility Name: **Sterling Foundry, Inc.**

Application Number: **02-1816**

Date: **April 7, 1999**

E = organic compound emission rate (pounds)

Ts = tons of sand mixed

1.17 = organic compound emission factor, based on emissions testing done by the OCMA on phenolic urethane resins.

If the type of the resin changes, the permittee shall determine a new emission factor based on supplier's data.

e. Emission Limit

7.3 tons per year organic compounds

Applicable Compliance Method

Compliance with the above limitation shall be demonstrated by a summation of the daily organic compound emissions and by the recordkeeping requirements from section B.2 of these Additional Special Terms and Conditions.

**3. F009 - #2 nobake line: mold making**

a. Emission Limitation

1.0 lb PM per hour

Applicable Compliance Method

Compliance with the above limitation shall be demonstrated by using the following equation:

$$E = Ts \times 0.27 \text{ lb PM/tn sand}$$

where

E = pounds particulate matter emitted per hour

Ts = tons sand used per hour

0.27 lb PM/tn sand is an emission factor in lbs particulate matter per ton sand processed (from Ohio EPA's document "Reasonably Available Control Measures for Fugitive Dust Sources", Table 2.7-1 for mold sand prep and mold making) and a sand to iron ratio of 5:1

b. Emission Limitation

4.38 tons PM per year

Applicable Compliance Method

To determine the actual emission rate for particulate matter, the following equation shall be used:

$$E = \text{molds produced (tons per year)} \times 0.27 \text{ (lbs/tn)} \\ \times 1/2000 \text{ (tn/lbs)}$$

where:

E = particulate matter emissions (tns/year)  
0.27 = emission factor in lbs particulate matter per ton molds produced (from Ohio EPA's document "Reasonably Available Control Measures for Fugitive Dust Sources", Table 2.7-1 for mold sand prep and mold making) and a sand to iron ratio of 5:1

c. Emission Limitation

Visible emissions not to exceed 20 percent opacity on a three minute average

Applicable Compliance Method

*Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.*

d. Emission Limit

8 lbs/hr and 40 lbs/day of organic compounds

Applicable Compliance Method

Compliance with the above limitations shall be demonstrated by the recordkeeping requirements from section B.1 of these Additional Special Terms and Conditions and the following equation:

To determine the daily organic compound emission rate from this emissions unit, the following equation shall be used:

$$E = Ts \times 0.84 \text{ lb OC/tn sand}$$

where:

E = organic compound emission rate (pounds)

Ts = tons of sand mixed

0.84 = organic compound emission factor, based on data provided by Delta Resins & Refractories on the Airkure resin (a furan no-bake resin system)

If the type of the resin changes, the permittee shall determine a new emission factor based on supplier's data.

e. Emission Limit

7.3 tons per year organic compounds

Applicable Compliance Method

Compliance with the above limitation shall be demonstrated by a summation of the daily organic compound emissions and by the recordkeeping requirements from section B.1 of these Additional Special Terms and Conditions.

**4. F010 - #3 nobake line: mold making**

a. Emission Limitation

0.47 lb PM per hour

Applicable Compliance Method

Compliance with the above limitation shall be demonstrated by using the following equation:

$$E = Ts \times 0.27 \text{ lb PM/tn sand}$$

where

E = pounds particulate matter emitted per hour

Ts = tons sand used per hour

17 of 18 Pages

Facility Name: **Sterling Foundry, Inc.**

Application Number: **02-1816**

Date: **April 7, 1999**

0.27 lb PM/ tn sand is an emission factor in lbs particulate matter per ton sand processed (from Ohio EPA's document "Reasonably Available Control Measures for Fugitive Dust Sources", Table 2.7-1 for mold sand prep and mold making) and a sand to iron ratio of 5:1

b. Emission Limitation

2.1 tons PM per year

Applicable Compliance Method

To determine the actual emission rate for particulate matter, the following equation shall be used:

$$E = \text{molds produced (tons per year)} \times 0.27 \text{ (lbs/tn)} \\ \times 1/2000 \text{ (tn/lbs)}$$

where:

E = particulate matter emissions (tns/year)  
0.27= emission factor in lbs particulate matter per ton molds produced (from Ohio EPA's document "Reasonably Available Control Measures for Fugitive Dust Sources", Table 2.7-1 for mold sand prep and mold making) and an sand to iron ration of 5:1

c. Emission Limitation

Visible emissions not to exceed 20 percent opacity on a three minute average

Applicable Compliance Method

*Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.*

d. Emission Limit

8 lbs/hr and 40 lbs/day of organic compounds

18 of 18 Pages

Facility Name: **Sterling Foundry, Inc.**

Application Number: **02-1816**

Date: **April 7, 1999**

Applicable Compliance Method

Compliance with the above limitations shall be demonstrated by the recordkeeping requirements from section B.1 of these Additional Special Terms and Conditions and the following equation:

To determine the daily organic compound emission rate from this emissions unit, the following equation shall be used:

$$E = Ts \times 0.84 \text{ lb OC/tn sand}$$

where:

E = organic compound emission rate (pounds)

Ts = tons of sand mixed

0.84 = organic compound emission factor, based on data provided by Delta Resins & Refractories on the Airkure resin (a furan no-bake resin system)

If the type of the resin changes, the permittee shall determine a new emission factor based on supplier's data.

e. Emission Limit

7.3 tons per year organic compounds

Applicable Compliance Method

Compliance with the above limitation shall be demonstrated by a summation of the daily organic compound emissions and by the recordkeeping requirements from section B.1 of these Additional Special Terms and Conditions.