

Facility ID: 1677020149 Issuance type: Final State Permit To Operate

This version of facility specific terms and conditions was converted from a database format to an HTML file during an upgrade of the Ohio EPA, Division of Air Pollution Control's permitting software. Every attempt has been made to convert the terms and conditions to look and substantively conform to the permit issued or being drafted in STARS. However, the format of the terms may vary slightly from the original. In addition, although it is not expected, there is a slight possibility that a term and condition may have been inadvertently "left out" of this reproduction during the conversion process. Therefore, if this version is to be used as a starting point in drafting a new version of a permit, it is imperative that the entire set of terms and conditions be reviewed to ensure they substantively mimic the issued permit. The official version of any permit issued final by Ohio EPA is kept in the Agency's Legal section. The Legal section may be contacted at (614) 644-3037.

In addition to the terms and conditions, hyperlinks have been inserted into the document so you may more readily access the section of the document you wish to review.

Finally, the term language under "Part II" and before "A. Applicable Emissions Limitations..." has been added to aid in document conversion, and was not part of the original issued permit.

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Facility ID: 1677020149 Emissions Unit ID: P901 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Lindberg Stationary Furnace	PTI # 16-1590	0.35 lb/hr of particulate matter 0.03 tpy of organic compounds 0.70 tpy of nitrogen oxides 0.01 tpy of sulfur dioxide 0.02 tpy of carbon monoxide 0.20 tpy of hydrogen fluoride
	OAC 3745-17-07(A)	20% opacity, as a six-minute average, from the stack
	OAC 3745-17-07(B)	20% opacity, as a three-minute average, for the fugitive emissions
	OAC 3745-17-08 OAC 3745-17-11	

2. **Additional Terms and Conditions**
 - (a) None

B. Operational Restrictions

1. The furnace shall be fired only with natural gas.
2. Only clean raw materials (aluminum pigs, clean foundry returns) shall be charged. Contaminated foundry returns shall not be employed.

C. Monitoring and/or Record Keeping Requirements

1. None

D. Reporting Requirements

1. None

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of these terms and conditions shall be determined in accordance with the following methods:
Emission Limitation:
0.35 lb/hr of particulate matter
Applicable Compliance Method:
 $(1.1)(X)+(0.017)(Y)$ = maximum pound(s) of particulate matter per hour
X = the maximum hourly rate of metal melted

Y = the maximum million Btu per hour

The emission factors of 1.1 lbs of particulate matter per ton of metal melted and 0.017 lb of particulate matter per million BTU are listed in the Air Quality Permits - A Handbook For Regulators and Industry: Tables 11-1 and 11-2.

Emission tests may be required in the future, in accordance with test procedures approved by the Director, to demonstrate compliance with the particulate matter hourly emission limitation.

Emission Limitation:

0.70 tpy of nitrogen oxides

Applicable Compliance Method:

Multiply the nitrogen oxides emissions factor of 0.15 pound of nitrogen oxides emissions per million Btu by the maximum million Btu per hour and the hours of operation per year, and divide by 2000. The emission factor is listed in the Air Quality Permits - A Handbook For Regulators and Industry: Table 11-1.

Emission Limitation:

0.01 tpy of sulfur dioxide

Applicable Compliance Method:

Multiply the sulfur dioxide emissions factor of 0.001 pound of sulfur dioxide emissions per million Btu by the maximum million Btu per hour and the hours of operation per year, and divide by 2000. The emission factor is listed in the Air Quality Permits - A Handbook For Regulators and Industry: Table 11-1.

Emission Limitation:

0.02 tpy of carbon monoxide

Applicable Compliance Method:

Multiply the carbon monoxide emissions factor of 0.004 pound of carbon monoxide emissions per million Btu by the maximum million Btu per hour and the hours of operation per year, and divide by 2000. The emission factor is listed in the Air Quality Permits - A Handbook For Regulators and Industry: Table 11-1.

Emission Limitation:

0.03 tpy of organic compounds

Applicable Compliance Method:

Multiply the organic compounds emissions factor of 0.007 pound of organic compounds emissions per million Btu by the maximum million Btu per hour and the hours of operation per year, and divide by 2000. The emission factor is listed in the Air Quality Permits - A Handbook For Regulators and Industry: Table 11-1.

Emission Limitation:

0.20 tpy of hydrogen fluoride

Applicable Compliance Method:

The following equation shall be employed:

$$[(F) \times (0.2)/(83.98) \times (3) \times (20.01)]/2000 = \text{tons per year of hydrogen fluoride emissions}$$

Where:

F = pounds of flux per year.

0.2 = weight percent of aluminum fluoride

83.98 = molecular weight of aluminum fluoride

3 = (6 lbmol hydrogen fluoride)/(2 lbmol aluminum fluoride)

20.01 = molecular weight of hydrogen fluoride

2000 = pounds per ton

The equation was developed by the Akron RAQMD using a material balance approach.

Emission Limitation:

20% opacity as a three-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

F. Miscellaneous Requirements

1. None

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Facility ID: 1677020149 Emissions Unit ID: P902 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Lindberg Tilting Furnace	PTI # 16-1590	0.35 lb/hr of particulate matter 0.04 tpy of organic compounds 0.90 tpy of nitrogen oxides 0.01 tpy of sulfur dioxide 0.02 tpy of carbon monoxide 0.20 tpy of hydrogen fluoride
	OAC 3745-17-07(A)	20% opacity, as a six-minute average, from the stack
	OAC 3745-17-07(B)	20% opacity, as a three-minute average, for the fugitive emissions
	OAC 3745-17-08 OAC 3745-17-11	

2. **Additional Terms and Conditions**
 - (a) None

B. Operational Restrictions

1. The furnace shall be fired only with natural gas.
2. Only clean raw materials (aluminum pigs, clean foundry returns) shall be charged. Contaminated foundry returns shall not be employed.

C. Monitoring and/or Record Keeping Requirements

1. None

D. Reporting Requirements

1. None

E. Testing Requirements

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

0.35 lb/hr of particulate matter

Applicable Compliance Method:

$$(1.1)(X)+(0.017)(Y)=\text{maximum pound(s) of particulate matter per hour}$$

X = the maximum hourly rate of metal melted

Y = the maximum million Btu per hour

The emission factors of 1.1 lbs of particulate matter per ton of metal melted and 0.017 lb of particulate matter per million BTU are listed in the Air Quality Permits - A Handbook For Regulators and Industry: Tables 11-1 and 11-2.

Emission tests may be required in the future, in accordance with test procedures approved by the Director, to demonstrate compliance with the particulate matter hourly emission limitation.

Emission Limitation:

0.90 tpy of nitrogen oxides

Applicable Compliance Method:

Multiply the nitrogen oxides emissions factor of 0.15 pound(s) of nitrogen oxides emissions per million Btu by the maximum million Btu per hour by the maximum hours of operation per year divided by 2000. The emission factor is listed in the Air Quality Permits - A Handbook For Regulators and Industry: Table 11-1.

Emission Limitation:

0.01 tpy of sulfur dioxide

Applicable Compliance Method:

Multiply the sulfur dioxide emissions factor of 0.001 pound(s) of sulfur dioxide emissions per million Btu by the maximum million Btu per hour by the maximum hours of operation per year divided by 2000. The emission factor is listed in the Air Quality Permits - A Handbook For Regulators and Industry: Table 11-1.
Emission Limitation:

0.02 tpy of carbon monoxide

Applicable Compliance Method:

Multiply the carbon monoxide emissions factor of 0.004 pound(s) of carbon monoxide emissions per million Btu by the maximum million Btu per hour by the maximum hours of operation per year divided by 2000. The emission factor is listed in the Air Quality Permits - A Handbook For Regulators and Industry: Table 11-1.
Emission Limitation:

0.04 tpy of organic compounds

Applicable Compliance Method:

Multiply the organic compounds emissions factor of 0.007 pound(s) of organic compounds emissions per million Btu by the maximum million Btu per hour by the maximum hours of operation per year divided by 2000. The emission factor is listed in the Air Quality Permits - A Handbook For Regulators and Industry: Table 11-1.
Emission Limitation:

0.20 tpy of hydrogen fluoride

Applicable Compliance Method:

The following equation shall be employed:

$$[(F) \times (0.2)/(83.98) \times (3) \times (20.01)]/2000 = \text{tons per year of hydrogen fluoride emissions}$$

Where:

- F = pounds of flux per year.
- 0.2 = weight percent of aluminum fluoride
- 83.98 = molecular weight of aluminum fluoride
- 3 = (6 lbmol hydrogen fluoride)/(2 lbmol aluminum fluoride)
- 20.01 = molecular weight of hydrogen fluoride
- 2000 = pounds per ton

The equation was developed by the Akron RAQMD using a material balance approach.

Emission Limitation:

20% opacity as a three-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

F. **Miscellaneous Requirements**

1. None

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Facility ID: 1677020149 Emissions Unit ID: P903 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

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1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. **Applicable Emissions Limitations and/or Control Requirements**

1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Sand Handling and Preparation/Cope Making	PTI #16-1590	3.53 lbs/hr of particulate matter 6.70 lbs/hr of organic compounds 3.30 lbs/hr of methanol*
		*methanol is also included in the organic compounds allowable
	OAC 3745-17-07	20% opacity as a six-minute average, for the stack emissions 20% opacity as a three-minute average, for the fugitive emissions
	OAC 3745-17-08 OAC 3745-17-11	

2. Additional Terms and Conditions

- (a) The permittee shall employ only nonphotochemically reactive materials in this emissions unit. Sand storage silo(s) shall be equipped with a fabric filter to control particulate emissions from the carrier to the silo(s). The equipment for sand preparation and cope makeup shall be of a design, and operated in a manner, which minimizes fugitive dust emissions.

B. Operational Restrictions

- 1. The maximum annual mold wash usage for this emissions unit shall not exceed 5500 gallons, based upon a rolling, 12-month summation of the mold wash usage figures.

To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the mold wash usage levels specified in the following table:

Month(s) Maximum Allowable Cumulative Mold Wash Usage

- 0-1 458 gallons
- 1-2 917 gallons
- 1-3 1375 gallons
- 1-4 1833 gallons
- 1-5 2292 gallons
- 1-6 2750 gallons
- 1-7 3208 gallons
- 1-8 3667 gallons
- 1-9 4124 gallons
- 1-10 4583 gallons
- 1-11 5041 gallons
- 1-12 5500 gallons

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual mold wash usage limitation shall be based upon a rolling, 12-month summation of the mold wash usage figures.

C. Monitoring and/or Record Keeping Requirements

- 1. The permittee shall maintain monthly records of the following information:
 - a. the mold wash usage for each month;
 - b. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the mold wash usage figures; and
 - c. during the first 12 calendar months of operation following the issuance of this permit, the cumulative mold wash usage for each calendar month.
- 2. The permittee shall collect the following information for each day for the emissions unit :
 - a. The MSDS sheets for each material employed.

D. Reporting Requirements

- 1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month mold wash usage limitation and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative mold wash usage levels.
- 2. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a "photochemically reactive material" (as defined in OAC 3745-21-05(C)(5)) is employed in the emissions unit. The notification shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
- 3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if the formulation of a material (i.e. mold wash) changes or a new material is employed in the emissions unit or the process is changed in such a way as to affect emissions. The notification shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.

E. Testing Requirements

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

3.53 lbs/hr of particulate matter

Applicable Compliance Method:

 $(2.3)X+(0.003)Y+(0.3)Z$ = maximum pounds of PM per hour

X = the maximum ton(s) of aluminum produced
Y = the maximum ton(s) of sand unloaded
Z = the maximum ton(s) of sand mixed

Emissions factors of 2.3 pounds of particulate emissions per ton of aluminum produced, 0.003 pound of particulate emissions per ton of sand unloaded, and 0.3 pound of particulate emissions per ton of sand mixed come from RACM, Table 2.7-1.
Emission Limitation:

6.7 lbs/hr of organic compounds

Applicable Compliance Method:

Multiply the maximum pounds of mold wash per hour by the weight percent of organic compounds.
Emission Limitation:

3.3 lbs/hr of methanol

Applicable Compliance Method:

Multiply the maximum pounds of mold wash per hour by the weight percent of methanol.
Emission Limitation:

20% opacity as a three-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)
- F. **Miscellaneous Requirements**

1. None