

Facility ID: 1677000009 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: 1677000009 Emissions Unit ID: F001 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>
Reverberatory type natural gas-fired aluminum melt furnaces (13)	OAC rule 3745-31-05 (PTI 16-1416)	4.0 lbs/hr of particulate matter 2.8 lbs/hr of carbon monoxide 2.0 lbs/hr of nitrogen oxides 5% opacity for stack and fugitive emissions
		See A.2.c below.
	OAC rule 3745-17-07	See A.2.c below.
	OAC rule 3745-17-11	

2. Additional Terms and Conditions

- (a) Based on application data and PTI 16-1416, as issued November 2, 1994, Emissions Unit F001 is comprised of 13 separate but similar reverberatory type aluminum melt furnaces, grouped together as one emissions unit, with a total combined maximum heat input rate of 21 million Btu/hr and a total combined maximum process weight rate of 6500 lbs/hr. Also, there are no particulate emission controls on any of the furnaces, making this emissions unit a fugitive dust source, as far as aluminum melt activities are concerned. In addition, particulate emissions, among other pollutants, exiting a stack are a result of combustion exhaust gases from natural gas used to fuel this emissions unit. The hourly particulate matter, carbon monoxide, and nitrogen oxides emission limits are based upon the potential to emit for this emissions unit, as demonstrated in Sections E.1.b, E.1.c, and E.1.d, respectively. Therefore, no recordkeeping, deviation reporting, or compliance method calculations are required to demonstrate compliance with these limits. The limit based upon this rule is less stringent than the limit based upon OAC rule 3745-31-05.

B. Operational Restrictions

1. The permittee shall employ only natural gas as fuel in this emissions unit.
2. The permittee shall charge this emissions unit with only clean aluminum materials (e.g., bar stock, ingots, and clean foundry returns). Aluminum scrap; aluminum contaminated with grease, oil, dirt or other materials; or contaminated foundry returns shall not be employed in this emissions unit.
3. Neither demagging nor degassing shall be performed in this emissions unit. Only fluxing, performed with the addition of dry powdered fluxes, for the sole purpose of preventing, reducing, and removing oxide impurities from the aluminum melt, shall be permitted in this emissions unit.

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:

5% opacity

Applicable Compliance Methods:

i. for stack emissions, compliance shall be determined by visible particulate emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using the methods and procedures specified in USEPA Method 9; and

ii. for fugitive dust emissions, compliance shall be determined by visible particulate emission evaluations performed in accordance with OAC rule 3745-17-03(B)(3) using the methods and procedures specified in USEPA Method 9.

Emission Limitation:

4.0 lbs/hr of particulate matter

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the potential to emit calculations specified below:

For the purpose of determining the hourly potential emissions of particulate matter from this emissions unit, the following particulate matter emission factors from STAPPA/ALAPCO, Tables 11-1 and 11-2, published May 30, 1991 shall be utilized as well as the following emissions unit operating parameters:

Particulate matter emission factors:

- i. melting clean metal (MCM): 1.1 lbs/ton of aluminum processed; and
- ii. combustion of natural gas (CNG): 0.017 lb/million Btu heat input.

Emissions unit operating parameters:

- i. maximum process weight rate (PWRmax): 666 lbs of aluminum processed/hr;
- ii. maximum heat input rate (HIRmax): 21 million Btu heat input/hr; and
- iii. pounds to ton conversion factor (T): 1 ton/2000 lbs.

Potential to emit for hourly particulate matter emissions, in lbs/hr (PTEh):

$$\text{PTEh} = (\text{MCM})(\text{PWRmax})(\text{T}) + (\text{CNG})(\text{HIRmax}) = 3.93 \text{ lbs/hr}$$

Emission Limitation:

2.8 lbs/hr of carbon monoxide

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the potential to emit calculations specified below:

For the purpose of determining the hourly potential emissions of carbon monoxide from this emissions unit, the following carbon monoxide emission factor supplied by the permittee shall be utilized as well as the following emissions unit operating parameters:

Carbon monoxide emission factor:

- i. combustion of natural gas (CNG): 0.134 lb/million Btu heat input.

Emissions unit operating parameters:

- i. maximum heat input rate (HIRmax): 21 million Btu heat input/hr.

Potential to emit for hourly carbon monoxide emissions, in lbs/hr (PTEh):

$$\text{PTEh} = (\text{CNG})(\text{HIRmax}) = 2.81 \text{ lbs/hr}$$

Emission Limitation:

2.0 lbs/hr of nitrogen oxides

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the potential to emit calculations specified below:

For the purpose of determining the hourly potential emissions of nitrogen oxides from this emissions unit, the following nitrogen oxides emission factor supplied by the permittee shall be utilized as well as the following emissions unit operating parameters:

Nitrogen oxides emission factor:

- i. combustion of natural gas (CNG): 0.097 lb/million Btu heat input.

Emissions unit operating parameters:

- i. maximum heat input rate (HIRmax): 21 million Btu heat input/hr.

Potential to emit for hourly nitrogen oxides emissions, in lbs/hr (PTEh):

PTEh = (CNG)(HIRmax) = 2.04 lbs/hr

F. **Miscellaneous Requirements**

1. None

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Facility ID: 167700009 Emissions Unit ID: F002 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>
Reverberatory type natural gas-fired zinc melt furnaces (5)	OAC rule 3745-17-07(A)(1)	20% opacity as a 6-minute average, except as provided by rule, for stack emissions
	OAC rule 3745-17-07(B)(1)	20% opacity as a 3-minute average, except as provided by rule, for fugitive emissions
		1.4 lbs/hr of particulate matter
	OAC rule 3745-17-11	

2. **Additional Terms and Conditions**

- (a) Based on application data and previously issued air permits, Emissions Unit F002 is comprised of 5 separate but similar reverberatory type zinc melt furnaces, grouped together as one emissions unit, with a total combined maximum heat input rate of 4.2 million Btu/hr and a total combined maximum process weight rate of 400 lbs/hr. Also, there are no particulate emission controls on any of the furnaces, making this emissions unit a fugitive dust source, as far as zinc melt activities are concerned. In addition, particulate emissions exiting a stack are a result of combustion exhaust gases from natural gas used to fuel this emissions unit.
The hourly particulate matter emission limit is greater than the potential to emit for this emissions unit, as demonstrated in Section E.1.c below. Therefore, no recordkeeping, deviation reporting, or compliance method calculations are required to demonstrate compliance with this limit.

B. **Operational Restrictions**

1. The permittee shall employ only natural gas as fuel in this emissions unit.
2. The permittee shall charge this emissions unit with only clean zinc materials (e.g., bar stock, ingots, and clean foundry returns). Zinc scrap; zinc contaminated with grease, oil, dirt or other materials; or contaminated foundry returns shall not be employed in this emissions unit.
3. No fluxing including demagging and degassing of the zinc melt is permitted in this emissions unit or any activity associated with the emissions unit.

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:

20% opacity as a 6-minute average, for stack emissions

Applicable Compliance Method:

For stack emissions, compliance shall be determined by visible particulate emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using the methods and procedures specified in USEPA Method 9.
Emission Limitation:

20% opacity as a 3-minute average, for fugitive emissions

Applicable Compliance Method:

For fugitive dust emissions, compliance shall be determined by visible particulate emission evaluations performed in accordance with OAC rule 3745-17-03(B)(3) using the methods and procedures specified in USEPA Method 9.
Emission Limitations:

1.4 lbs/hr of particulate matter

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the potential to emit calculations specified below:

For the purpose of determining the hourly potential emissions of particulate matter from this emissions unit, the following particulate matter emission factors from STAPPA/ALAPCO, Table 11-1 and Table 11-2, published May 30, 1991 shall be utilized as well as the following emissions unit operating parameters:

Particulate matter emission factors:

- i. melting clean metal (MCM): 1.1 lbs/ton of zinc processed; and
- ii. combustion of natural gas (CNG): 0.017 lb/million Btu heat input.

Emissions unit operating parameters:

- i. maximum process weight rate (PWRmax): 400 lbs of zinc processed/hr;
- ii. maximum heat input rate (HIRmax): 4.2 million Btu heat input/hr; and
- iii. pounds to ton conversion factor (T): 1 ton/2000 lbs.

Potential to emit for hourly particulate matter emissions, in lbs/hr (PTEh):

$$PTEh = (MCM)(PWRmax)(T) + (CNG)(HIRmax) = 0.29 \text{ lb/hr}$$

F. **Miscellaneous Requirements**

1. None