



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL  
MADISON COUNTY**

**CERTIFIED MAIL**

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: 01-08147**

**DATE: 10/30/2001**

Stephens Pipe and Steel Inc  
Don Bowsher  
Post Office Box 237  
Mt Sterling, OH 43143

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  
236 East Town Street, Room 300  
Columbus, Ohio 43215

Very truly yours,

Thomas G. Rigo, Manager  
Field Operations and Permit Section  
Division of Air Pollution Control

cc: USEPA

CDO



---

**Permit To Install  
Terms and Conditions**

**Issue Date: 10/30/2001  
Effective Date: 10/30/2001**

---

**FINAL PERMIT TO INSTALL 01-08147**

Application Number: 01-08147  
APS Premise Number: 0149000019  
Permit Fee: **\$3200**  
Name of Facility: Stephens Pipe and Steel Inc  
Person to Contact: Don Bowsher  
Address: Post Office Box 237  
Mt Sterling, OH 43143

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**10732 Schadel Rd SE  
Mt Sterling, Ohio**

Description of proposed emissions unit(s):  
**Galvanizers 1 and 2.**

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

Director

## Part I - GENERAL TERMS AND CONDITIONS

### A. Permit to Install General Terms and Conditions

#### 1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

#### 2. Reporting Requirements Related to Monitoring and Recordkeeping Requirements

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 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 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 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.)

#### 3. Records Retention Requirements

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.

#### 4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. 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, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

**5. Scheduled Maintenance/Malfunction Reporting**

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction 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. 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 emissions unit(s) that is (are) served by such control system(s).

**6. 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.

**7. 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.

**8. Termination of Permit to Install**

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install 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.

**9. Construction of New Sources(s)**

The proposed emissions unit(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

**Stephens Pipe and Steel Inc**  
**PTI Application: 01-08147**  
**Issued: 10/30/2001**

**Facility ID: 0149000019**

Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(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 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. 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 the requirements of this permit or cannot meet applicable standards.

**10. 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.

**11. 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).

**12. 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.

**13. Source Operation and Operating Permit Requirements 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, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within thirty (30) days after commencing operation of the emissions unit(s) covered by this permit.

Stephens Pipe and Steel Inc  
 PTI Application: 01-08147  
 Issued: 10/30/2001

Facility ID: 0149000019

#### 14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) 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.

#### 15. 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 this Permit to Install.

### B. 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**

<u>Pollutant</u>	<u>Tons Per Year</u>
PE	51.6
HCl	0.26

Stephens Pipe and Steel Inc  
PTI Application: 01 09147  
Issued

Facility ID: 0149000019

Emissions Unit ID: P001

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	OAC rule 3745-17-07(A)(1)
---	--------------------------------------	---------------------------

P001 - galvanizing line number 1 with hot dip zinc galvanizing kettle and acid cleaning tank	OAC rule 3745-31-05(A)(3)	
--	---------------------------	--

OAC rule 3745-17-11(B)(1)

Applicable Emissions  
Limitations/Control Measures

Particulate emissions (PE) shall not exceed 5.9 pounds per hour and 25.8 tons per year.

HCl emissions shall not exceed 0.03 pound per hour and 0.13 ton per year.

See Section A.2.a and A.2.c below.

Emissions from the combustion of natural gas shall not exceed the following:

Nitrogen oxide (NO<sub>x</sub>) emissions shall not exceed 0.75 pound per hour and 3.3 tons per year.

Carbon monoxide (CO) emissions shall not exceed 0.63 pound per hour and 2.76 tons per year.

See Section A.2.b below.

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

This emissions requirement is less stringent than the particulate matter limits established by OAC rule 3745-31-05(A)(3).

Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided

by rule.

## 2. Additional Terms and Conditions

- 2.a** The 0.03 pound of HCl per hour limitation for this emissions unit was established to reflect the hourly potential to emit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.b** The 0.75 pound of NO<sub>x</sub> per hour and 0.63 pound of CO per hour limitations from the combustion of natural gas for this emissions unit were established to reflect the hourly potential to emit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.c** The permittee shall maintain the "Air Emissions Management Plan" for the hot dip zinc galvanizing kettle submitted to the Ohio EPA, Central District Office on October 13, 2000. The plan includes, at a minimum, monthly inspections of the air control equipment. These inspections shall include a written report containing any needed repairs. Repairs shall be completed within 30 days of the inspection. If a time period longer than 30 days is needed to complete the repairs, the Ohio EPA, Central District Office shall be notified in writing. This notice shall list the repairs needed and the reason(s) the repairs could not be accomplished within the 30-day time frame.

The permittee shall also train the operators in the proper procedures for the cleaning, dressing, and adding of flux and ammonium chloride to the hot dip zinc galvanizing kettle, per the "Air Emissions Management Plan" referenced above, in order to minimize particulate emissions.

## B. Operational Restrictions

1. The zinc usage for this emissions unit shall not exceed 511 tons per month.

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. the color of the emissions;
  - b. whether the emissions are representative of normal operations;

- c. if the emissions are not representative of normal operations, the cause of the visible emissions;
  - d. the total duration of any visible emission incident; and
  - e. any corrective actions taken to eliminate the visible emissions.
2. The permittee shall collect and record the following information on a monthly basis for this emissions unit:
  - a. the amount of zinc used, in tons;
  - b. the total hours of operation for the emissions unit; and
  - c. the calculated average hourly zinc usage, i.e., [(a) / (b)].
3. The permittee shall conduct, at a minimum, monthly inspections of the air control equipment per the "Air Emissions Management Plan" listed in Section A.2.c of this permit. These inspections shall include a written report containing any needed repairs.
4. The permit to install for this emissions unit, P001, was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: zinc chloride (fume)

TLV (mg/m<sup>3</sup>): 1

Maximum Hourly Emission Rate (lbs/hr): 0.57

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 11.58

MAGLC (ug/m<sup>3</sup>): 23.8

Pollutant: zinc oxide (dust)

TLV (mg/m<sup>3</sup>): 10

Maximum Hourly Emission Rate (lbs/hr): 2.3

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 46.64

MAGLC (ug/m<sup>3</sup>): 238.1

Pollutant: ammonium chloride (fume)

TLV (mg/m<sup>3</sup>): 10

Maximum Hourly Emission Rate (lbs/hr): 0.63

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 12.7

MAGLC (ug/m<sup>3</sup>): 238.1

5. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
  - a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
  - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
  - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

6. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":
  - a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

Emissions Unit ID: **P001**

- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

**D. Reporting Requirements**

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.
2. The permittee shall notify the Ohio EPA, Central District Office in writing of any monthly record showing that the emissions unit employs more than the applicable maximum monthly zinc usage limit. The notification shall include a copy of such record and shall be sent to the Ohio EPA, Central District Office within 45 days after the exceedance occurs.
3. The permittee shall notify the Ohio EPA, Central District Office in writing of any time period longer than 30 days that is needed to complete the repairs per the "Air Emissions Management Plan" listed in Section A.2.c of this permit. This notification shall list the repairs needed and the reason(s) the repairs could not be accomplished within the 30-day time frame. The notification shall be submitted within 45 days upon discovery of the malfunction(s) of the air control equipment.

**E. Testing Requirements**

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
  - a. Emissions Limitation:  
  
PE shall not exceed 5.9 pounds per hour.  
  
Applicable Compliance Method:  
  
Compliance shall be determined by the following:
    - i. Multiply the average hourly zinc usage (in tons) calculated in Section C.2.c by the emission factor of 5 pounds of particulate per ton of zinc used. This emission factor is specified in USEPA's Factor Information Retrieval (FIRE) Data System, Version 6.23, under zinc galvanizing kettle, SCC code 30400805.

- ii. Use the following calculations as provided by the facility:

Maximum of 48 pounds of granular charcoal used per hour  
5% of the granular charcoal is emitted as PE  
 $(48 \text{ lbs granular charcoal/hour}) \times 5\% = 2.4 \text{ lbs/hour}$

- iii. Sum the particulate emissions calculated in Steps 1 and 2 above. The total hourly PE shall be based on this summation.

- b. Emissions Limitation:

PE shall not exceed 25.8 tons per year.

Applicable Compliance Method:

Compliance with the annual limitation shall be assumed as long as compliance with the hourly limitation is maintained (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- c. Emissions Limitation:

HCl emissions shall not exceed 0.03 pound per hour.

Applicable Compliance Method:

Compliance shall be based upon the following calculations as provided by the facility:

1.3 pounds of HCL is emitted per square foot of tank surface per year.  
 $(1 \text{ tank}) \times (12 \text{ feet}) \times (17 \text{ feet}) = 204 \text{ ft}^2$  of total surface area  
 $(204 \text{ ft}^2) \times (1.3 \text{ lbs HCl/ft}^2/\text{year}) = 265.2 \text{ lbs HCl/year}$   
 $(265.2 \text{ lbs HCl/year}) \times (1 \text{ year}/8760 \text{ hours}) = 0.03 \text{ lb HCl/hour}$

- d. Emissions Limitation:

HCl emissions shall not exceed 0.13 ton per year.

Applicable Compliance Method:

Compliance shall be based upon the following calculations as provided by the facility:

1.3 pounds of HCL is emitted per square foot of tank surface per year.  
(1 tank) x (12 feet) x (17 feet) = 204 ft<sup>2</sup> of total surface area  
(204 ft<sup>2</sup>) x (1.3 lbs HCl/ft<sup>2</sup>/year) = 265.2 lbs HCl/year = 0.13 ton/year

e. Emissions Limitation:

NO<sub>x</sub> emissions shall not exceed 0.75 pound per hour.

Applicable Compliance Method:

Compliance shall be determined by using the emission factor for NO<sub>x</sub> listed in AP-42, 5th Ed., Chapter 1.4, "Natural Gas Combustion," Table 1.4-1, which is 100 lbs NO<sub>x</sub> /10<sup>6</sup> scf. This emission factor shall be multiplied by the maximum hourly natural gas usage, which is 7, 534 ft<sup>3</sup>/hr, to obtain the hourly NO<sub>x</sub> emissions.

f. Emissions Limitation:

NO<sub>x</sub> emissions shall not exceed 3.3 tons per year.

Applicable Compliance Method:

Compliance with the annual limitation shall be assumed as long as compliance with the hourly limitation is maintained (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

g. Emissions Limitation:

CO emissions shall not exceed 0.63 pound per hour.

Applicable Compliance Method:

Compliance shall be determined by using the emission factor for CO listed in AP-42, 5th Ed., Chapter 1.4, "Natural Gas Combustion," Table 1.4-1, which is 84 lbs CO /10<sup>6</sup> scf. This emission factor shall be multiplied by the maximum hourly natural gas usage, which is 7, 534 ft<sup>3</sup>/hr, to obtain the hourly CO emissions.

h. Emissions Limitation:

CO emissions shall not exceed 2.76 tons per year.

**Stephens Pipe and Steel Inc**  
**PTI Application: 01 09147**  
**Issued**

**Facility ID: 0149000019**

Emissions Unit ID: **P001**

Applicable Compliance Method:

Compliance with the annual limitation shall be assumed as long as compliance with the hourly limitation is maintained (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

i. Emissions Limitation:

Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Method 9, and the methods and procedures specified in OAC rule 3745-17-03 (B) (1).

16

**Steph**

**PTI A**

**Issued: 10/30/2001**

Emissions Unit ID: **P001**

**F. Miscellaneous Requirements**

None

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	OAC rule 3745-17-11(B)(1)
P002 - galvanizing line number 2 with hot dip zinc galvanizing kettle and acid cleaning tank	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-07(A)(1)

**Steph****PTI A****Issued: 10/30/2001**Emissions Unit ID: **P002**

Applicable Emissions  
Limitations/Control Measures

Particulate emissions (PE) from this emissions unit shall not exceed 5.9 pounds per hour and 25.8 tons per year.

HCl emissions shall not exceed 0.03 pound per hour and 0.13 ton per year.

See Section A.2.a and A.2.c below.

Emissions from the combustion of natural gas shall not exceed the following:

Nitrogen oxide (NO<sub>x</sub>) emissions shall not exceed 0.75 pound per hour and 3.3 tons per year.

Carbon monoxide (CO) emissions shall not exceed 0.63 pound per hour and 2.76 tons per year.

See Section A.2.b below.

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

This emissions requirement is less stringent than the particulate matter limits established by OAC rule 3745-31-05(A)(3).

Visible particulate emissions shall not exceed 20% opacity as a six-

minute average, except as provided by rule.

**2. Additional Terms and Conditions**

- 2.a** The 0.03 pound of HCl per hour limitation for this emissions unit was established to reflect the hourly potential to emit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.b** The 0.75 pound of NO<sub>x</sub> per hour and 0.63 pound of CO per hour limitations from the combustion of natural gas for this emissions unit were established to reflect the hourly potential to emit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.c** The permittee shall maintain the "Air Emissions Management Plan" for the hot dip zinc galvanizing kettle submitted to the Ohio EPA, Central District Office on October 13, 2000. The plan includes, at a minimum, monthly inspections of the air control equipment. These inspections shall include a written report containing any needed repairs. Repairs shall be completed within 30 days of the inspection. If a time period longer than 30 days is needed to complete the repairs, the Ohio EPA, Central District Office shall be notified in writing. This notice shall list the repairs needed and the reason(s) the repairs could not be accomplished within the 30-day time frame.

The permittee shall also train the operators in the proper procedures for the cleaning, dressing, and adding of flux and ammonium chloride to the hot dip zinc galvanizing kettle, per the "Air Emissions Management Plan" referenced above, in order to minimize particulate emissions.

**B. Operational Restrictions**

1. The zinc usage for this emissions unit shall not exceed 511 tons per month.

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. the color of the emissions;
  - b. whether the emissions are representative of normal operations;

- c. if the emissions are not representative of normal operations, the cause of the visible emissions;
  - d. the total duration of any visible emission incident; and
  - e. any corrective actions taken to eliminate the visible emissions.
2. The permittee shall collect and record the following information on a monthly basis for this emissions unit:
  - a. the amount of zinc used, in tons;
  - b. the total hours of operation for the emissions unit; and
  - c. the calculated average hourly zinc usage, i.e., [(a) / (b)].
3. The permittee shall conduct, at a minimum, monthly inspections of the air control equipment per the "Air Emissions Management Plan" listed in Section A.2.c of this permit. These inspections shall include a written report containing any needed repairs.
4. The permit to install for this emissions unit, P002, was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: zinc chloride (fume)

TLV (mg/m<sup>3</sup>): 1

Maximum Hourly Emission Rate (lbs/hr): 0.57

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 11.58

MAGLC (ug/m<sup>3</sup>): 23.8

Pollutant: zinc oxide (dust)

TLV (mg/m<sup>3</sup>): 10

Maximum Hourly Emission Rate (lbs/hr): 2.3

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 46.64

MAGLC (ug/m<sup>3</sup>): 238.1

Pollutant: ammonium chloride (fume)

TLV (mg/m<sup>3</sup>): 10

Maximum Hourly Emission Rate (lbs/hr): 0.63

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 12.7

MAGLC (ug/m<sup>3</sup>): 238.1

5. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
  - a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
  - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
  - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

6. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":
  - a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

Emissions Unit ID: **P002**

- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

**D. Reporting Requirements**

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.
2. The permittee shall notify the Ohio EPA, Central District Office in writing of any monthly record showing that the emissions unit employs more than the applicable maximum monthly zinc usage limit. The notification shall include a copy of such record and shall be sent to the Ohio EPA, Central District Office within 45 days after the exceedance occurs.
3. The permittee shall notify the Ohio EPA, Central District Office in writing of any time period longer than 30 days that is needed to complete the repairs per the "Air Emissions Management Plan" listed in Section A.2.c of this permit. This notification shall list the repairs needed and the reason(s) the repairs could not be accomplished within the 30-day time frame. The notification shall be submitted within 45 days upon discovery of the malfunction(s) of the air control equipment.

**E. Testing Requirements**

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
  - a. Emissions Limitation:  
  
PE shall not exceed 5.9 pounds per hour.  
  
Applicable Compliance Method:  
  
Compliance shall be determined by the following:
    - i. Multiply the average hourly zinc usage (in tons) calculated in Section C.2.c by the emission factor of 5 pounds of particulate per ton of zinc used. This emission factor is specified in USEPA's Factor Information Retrieval (FIRE) Data System, Version 6.23, under zinc galvanizing kettle, SCC code 30400805.

- ii. Use the following calculations as provided by the facility:

Maximum of 48 pounds of granular charcoal used per hour  
5% of the granular charcoal is emitted as PE  
 $(48 \text{ lbs granular charcoal/hour}) \times 5\% = 2.4 \text{ lbs/hour}$

- iii. Sum the particulate emissions calculated in Steps 1 and 2 above. The total hourly PE shall be based on this summation.

- b. Emissions Limitation:

PE shall not exceed 25.8 tons per year.

Applicable Compliance Method:

Compliance with the annual limitation shall be assumed as long as compliance with the hourly limitation is maintained (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- c. Emissions Limitation:

HCl emissions shall not exceed 0.03 pound per hour.

Applicable Compliance Method:

Compliance shall be based upon the following calculations as provided by the facility:

1.3 pounds of HCL is emitted per square foot of tank surface per year.  
 $(1 \text{ tank}) \times (12 \text{ feet}) \times (17 \text{ feet}) = 204 \text{ ft}^2$  of total surface area  
 $(204 \text{ ft}^2) \times (1.3 \text{ lbs HCl/ft}^2/\text{year}) = 265.2 \text{ lbs HCl/year}$   
 $(265.2 \text{ lbs HCl/year}) \times (1 \text{ year}/8760 \text{ hours}) = 0.03 \text{ lb HCl/hour}$

- d. Emissions Limitation:

HCl emissions shall not exceed 0.13 ton per year.

Applicable Compliance Method:

Compliance shall be based upon the following calculations as provided by the facility:

Emissions Unit ID: P002

1.3 pounds of HCL is emitted per square foot of tank surface per year.  
 (1 tank) x (12 feet) x (17 feet) = 204 ft<sup>2</sup> of total surface area  
 (204 ft<sup>2</sup>) x (1.3 lbs HCl/ft<sup>2</sup>/year) = 265.2 lbs HCl/year = 0.13 ton/year

e. Emissions Limitation:

NO<sub>x</sub> emissions shall not exceed 0.75 pound per hour.

Applicable Compliance Method:

Compliance shall be determined by using the emission factor for NO<sub>x</sub> listed in AP-42, 5th Ed., Chapter 1.4, "Natural Gas Combustion," Table 1.4-1, which is 100 lbs NO<sub>x</sub> /10<sup>6</sup> scf. This emission factor shall be multiplied by the maximum hourly natural gas usage, which is 7, 534 ft<sup>3</sup>/hr, to obtain the hourly NO<sub>x</sub> emissions.

f. Emissions Limitation:

NO<sub>x</sub> emissions shall not exceed 3.3 tons per year.

Applicable Compliance Method:

Compliance with the annual limitation shall be assumed as long as compliance with the hourly limitation is maintained (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

g. Emissions Limitation:

CO emissions shall not exceed 0.63 pound per hour.

Applicable Compliance Method:

Compliance shall be determined by using the emission factor for CO listed in AP-42, 5th Ed., Chapter 1.4, "Natural Gas Combustion," Table 1.4-1, which is 84 lbs CO /10<sup>6</sup> scf. This emission factor shall be multiplied by the maximum hourly natural gas usage, which is 7, 534 ft<sup>3</sup>/hr, to obtain the hourly CO emissions.

h. Emissions Limitation:

CO emissions shall not exceed 2.76 tons per year.

Applicable Compliance Method:

Compliance with the annual limitation shall be assumed as long as compliance with the hourly limitation is maintained (the annual limitation was calculated by multiplying the

hourly limitation by 8760, and then dividing by 2000).

i. Emissions Limitation:

Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Method 9, and the methods and procedures specified in OAC rule 3745-17-03 (B) (1).

26

**Steph**

**PTI A**

**Issued: 10/30/2001**

Emissions Unit ID: **P002**

**F. Miscellaneous Requirements**

None