

EMISSIONS ACTIVITY CATEGORY FORM STEEL MANUFACTURING

This form is to be completed for each fugitive dust emission unit that emits or has the potential to emit fugitive particulate matter emissions by means other than a stack. State/Federal regulations which may apply to a steel manufacturing facility are listed in the instructions. Note that there may be other regulations which apply to this emissions unit which are not included in this list.

Note: This emissions activity category (EAC) form does not include roadways and parking areas, storage piles, and material handling operations which may also be associated with a steel manufacturing facility. Therefore, additional EAC forms for these emissions units may need to be submitted.

1. Reason this form is being submitted (Check one)

- New Permit Renewal or Modification of Air Permit Number(s) (e.g. F001)_____

2. Maximum Operating Schedule: _____ hours per day; _____ days per year

If the schedule is less than 24 hours/day and 365 days/year, what limits the schedule to less than maximum? See instructions for examples. _____

3. Identification of fugitive dust emissions units:

<u>Check Those</u> <u>Emissions Units Present</u>	<u>Fugitive Dust</u> <u>Emissions Units</u>	<u>How many?</u>
<input type="checkbox"/>	Sintering	_____
<input type="checkbox"/>	Hot metal transfer to charge ladles	_____
<input type="checkbox"/>	Hot metal desulfurization	_____
<input type="checkbox"/>	Basic oxygen furnace (charging, leaking, tapping, etc.)	_____
<input type="checkbox"/>	Capped argon bubbling	_____
<input type="checkbox"/>	Ladle metallurgy facility	_____
<input type="checkbox"/>	Electric arc furnace (charging, leaking, tapping, etc.)	_____
<input type="checkbox"/>	Ladle refining furnace	_____
<input type="checkbox"/>	Continuous casting	_____
<input type="checkbox"/>	Conventional teeming	_____
<input type="checkbox"/>	Leaded steel teeming	_____
<input type="checkbox"/>	Scarfig (hand)	_____
<input type="checkbox"/>	Slag handling facility	_____
<input type="checkbox"/>	Other (describe): below	_____

4. Sintering

- a. Windbox
Maximum _____ tons/hour finished sinter
Maximum _____ tons/year finished sinter
- b. Sinter discharge
Maximum _____ tons/hour finished sinter
Maximum _____ tons/year finished sinter

5. Hot metal transfer to charge ladles/hot metal desulfurization process data:

- a. Maximum ladle capacity _____ tons
- b. Maximum quantity hot metal transferred _____ tons/hour
- c. Maximum quantity hot metal desulfurized _____ tons/hour
- d. Maximum quantity of hot metal transferred per year _____ tons/year
- e. Maximum quantity of hot metal desulfurized per year _____ tons/year
- f. Average desulfurization cycle time per ladle _____ hours
- g. Desulfurization agent(s) _____

- h. Desulfurization agent injection rate _____ pounds/ton hot metal

6. Basic oxygen furnace (BOF) process data:

- a. BOF ID _____
- b. BOF manufacturer _____
- c. Maximum design steel
production rate (tons/hour) _____
- d. Maximum quantity of steel
produced per hour (tons/hour) _____
- e. Maximum quantity of steel
produced per year (tons/year) _____
- f. Average cycle time for one
heat (hours) _____
- g. Maximum quantity of hot metal
charged per hour (tons/hour) _____
- h. Maximum quantity of hot metal
charged per year (tons/year) _____
- i. Maximum quantity of steel
tapped per hour (tons/hour) _____
- j. Maximum quantity of steel
tapped per year (tons/year) _____

7. Capped argon bubbling process data:

- a. Maximum ladle capacity _____ tons steel
- b. Maximum design steel process rate _____ tons/hour
- c. Maximum quantity of steel processed per hour _____ tons/hour
- d. Bulk alloys added (list alloys and amount per heat)

- e. Wire feed additions (list alloys and amount per heat)

f. Argon stirring injection rate _____ cfm

8. Ladle metallurgy facility process data:

- a. Maximum ladle capacity _____ tons steel
- b. Maximum design steel process rate _____ tons/hour
- c. Maximum quantity of steel processed per hour _____ tons/hour
- d. Bulk alloys added (list alloys and amount per heat)

e. Wire feed additions (list alloys and amount per heat)

f. Argon stirring injection rate _____ cfm

9. Electric arc furnace (EAF) process data:

- a. EAF ID _____
- b. EAF manufacturer _____
- c. Maximum design steel production rate (tons/hour) _____
- d. Maximum quantity of steel produced per hour (tons/hour) _____
- e. Maximum quantity of steel produced per year (tons/year) _____
- f. Average cycle time for one heat (hours) _____

10. Ladle refining furnace process data:

- a. Maximum ladle capacity _____ tons steel
- b. Maximum design steel process rate _____ tons/hour
- c. Maximum quantity of steel processed per hour _____ tons/hour
- d. Bulk alloys added (list alloys and amount per heat)

e. Wire feed additions (list alloys and amount per heat)

f. Argon stirring injection rate _____ cfm

11. Continuous casting/conventional teeming/leaded steel teeming process data:

- a. Type of pouring performed (casting or teemed) _____
- b. Type of product molded (slabs, billets, bloom) _____
- c. Manufacturer of continuous casting equipment _____

12. Scarfing (hand) process data:

- a. Describe hand scarfing operation _____

- b. Maximum number of man hours of hand scarfing operations per year _____
man-hours/year

13. Control methods to be used for fugitive dust emissions from steel manufacturing processes:

	Capture Method	Capture Efficiency	Control Method	Control Efficiency
Sintering				
Transfer to charge ladles/hot metal desulfurization				
Basic oxygen furnace				
Capped argon bubbling				
Ladle metallurgy facility				
Electric arc furnace (EAF)				
Ladle refining furnace				
Continuous casting				
Conventional teeming				
Leaded steel teeming				
Scarfiging				
Other				

INSTRUCTIONS FOR COMPLETION OF THE EMISSIONS ACTIVITY CATEGORY FORM FOR STEEL MANUFACTURING

GENERAL INSTRUCTIONS:

Provide complete responses to all applicable questions. If an item does not apply to the emissions unit, write in "Not Applicable" or "NA." If the answer is not known, write in "Not Known" or "NK." If you need assistance in understanding a question after reading the instructions below, contact your Ohio EPA District Office or Local Air Agency for assistance. Submittal of an incomplete application will delay application review and processing. In addition, the application may be returned as incomplete if all applicable questions are not answered appropriately.

APPLICABLE REGULATIONS:

The following State and Federal Regulations may be applicable to steel manufacturing. Note that there may be other regulations which apply to this emissions unit which are not included in this list.

Federal: 40 CFR 60, (NSPS) Subparts A, N (Basic Process Oxygen Furnaces)
40 CFR 60, (NSPS) Subparts, AA and AAa (Steel Plants, Electric Arc Furnaces)
40 CFR 63, (MACT) Subparts A, FFFFF (Integrated Iron & Steel)

State: OAC rule 3745-31-02 (Permit to Install)
OAC rule 3745-31-05 (Best Available Technology)
OAC rule 3745-35-02 (Permit to Operate)
OAC rule 3745-17-07 (Visible Particulate Emissions)
OAC rule 3745-17-11 (Particulate Emissions)
OAC rule 3745-18-06 (Sulfur Dioxide Emissions)

If you would like a copy of these regulations, contact your Ohio EPA District Office or Local Air Agency. State regulations may also be viewed and downloaded from the Ohio EPA website at <http://www.epa.state.oh.us/dapc/regs/regs.html>. Federal regulations may be viewed and downloaded at <http://www.epa.gov/docs/epacfr40/chapt-I.info/subch-C.htm>.

CALCULATING EMISSIONS:

Manufacturers of some types of emissions units and most types of control equipment develop emissions estimates or have stack test data which you can request. Stack testing of the emissions may be done. Emissions unit sampling test data may be either for this emissions unit or a similar one located at the facility or elsewhere. You may develop your own emission factors by mass balance or other knowledge of your process, if you can quantify inputs and outputs accurately. You may be able to do this on a small scale or over a short period of time, if it is not practical during regular production. If you have control equipment, you may be able to quantify the amount of pollutants collected over a known time period or production amount. Any emission factor calculation should include a reference to the origin of the emission factor or control efficiency.

The emissions from steel manufacturing processes may be estimated using the information from section 12.5 of AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I, available from the following website: <http://www.epa.gov/ttn/chief/ap42/index.html>.

SPECIFIC INSTRUCTIONS:

1. Indicate whether this is an application for a new permit or an application for permit renewal. If applying for a permit renewal, provide the 4-character OEPA emissions unit identification number.
2. Provide the maximum number of hours per day and days per year the steel manufacturing operation is expected to operate. The following are examples of why the maximum number of hours per day may be less than 24 or the maximum number of days per year may be less than 365 (this list is not all-inclusive):
 - The facility can only operate during daylight hours.
 - The process can only operate within a certain range of ambient temperatures.
 - The process is limited by another operation (i.e., a bottleneck).
3. This emissions activity category form is to be used for certain operations at steel manufacturing facilities. Typical emissions units to be included on this form are listed. Please use the specific emissions activity category forms for roadways and parking areas, storage piles, material handling operations for such fugitive dust emissions units.

Paragraph (B)(6) of OAC Rule 3745-17-01 defines "fugitive dust" as "...particulate matter which is, or was prior to the installation of control equipment, emitted from any source by means other than a stack." Several emissions units at steel manufacturing facilities emit particulate matter in such fashion, and the requirements of OAC Rules 3745-17-07(B) (Visible particulate emission limitations for fugitive dust) and 3745-17-08 (Restriction of emissions of fugitive dust) may be applicable.

Identify the emissions units at the facility by placing a check mark in the appropriate block adjacent to the respective emissions unit type. If there are other emissions units at the facility which are not specifically listed and do not have other applicable emissions activity category forms prepared for them, please identify such emissions unit(s) in the section marked "Other (describe)".

6. Complete the requested basic oxygen furnace process data in items (a) through (j). If there is more than one such furnace at the facility, use one of the four separate columns for each furnace in answering each item. If there are more than four basic oxygen furnaces at the facility, please make a duplicate copy of this form or obtain an additional form from the OEPA.
13. For each operation identified elsewhere in this form, describe how the emissions are captured and estimate the percentage of emissions which are captured. Also describe how the emissions are controlled and estimate the percentage of reduction attained. Efficiencies may be determined, in order of preference, by testing, design, published estimation methods or best engineering judgement. For multiple methods, enter them in the blank separated by a slash (/) and do the same for the efficiency.