Facility ID: 1483090295 Issuance type: Final State Permit To Operate

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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.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1483090295 Emissions Unit ID: K007 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.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
K007-stator core coater controlled with a catalytic oxidizer (modification)	OAC rule 3745-31-05(A)(3) (PTI 14-04938)	Volatile Organic Compund (VOC) emissions shall not exceed 0.13 lb/hr for coatings only. Volatile Organic Compund (VOC) emissions shall not exceed 0.88 TPY, including cleanup. See terms A.2.a, A.2.b and A.2.g. The requirements of this rule also include compliance with the requirements of OAC rules 3745-31-05(C) and 3745-21-09(B)(6).
	OAC rule 3745-31-05(C)	See term A.2.f.
	OAC rule 3745-21-09(B)(6)	See Section A.2.c.

2. **Additional Terms and Conditions**

   (a) The VOC content as applied for the coatings employed in this emissions unit shall not exceed 6.23 pounds of VOC per gallon of coating.
   The VOC content of the cleanup material employed in this emissions unit shall not exceed 7.32 pounds of VOC per gallon.
   When applying coatings, the permittee shall operate a catalytic oxidizier with an overall control efficiency which is at least 81% by weight and a destruction efficiency which is at least 90% by weight.
   The hourly emission limitation outlined above is based upon the emissions unit's potential to emit. Therefore, no hourly records are required to demonstrate compliance with this limitation.
   Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the VOC content limitations, usage limitations and the use of a catalytic oxidizer.
   The actual emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act from emissions units K001, K002, K005, K006, K007, K008, K009, K010, P001, P002, P003, P004, P005, P006, P007, P008, P009, P010, other de minimus air contaminant source, as defined in OAC rule 3745-15-05, and other air contaminant sources exempt from the requirement to obtain a permit-to-install pursuant to OAC rule 3745-31-03 installed subsequent to the issuance of this permit, combined, shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitations shall be based on a rolling, 12-month summation.
   The OC emissions from this emissions unit shall be controlled through the application of a permanent total enclosure with a 100% capture efficiency.

B. **Operational Restrictions**

1. The maximum annual coating and cleanup material usage for this emissions unit shall not exceed 742 gallons for coatings and 120 gallons for cleanup materials.

2. The permanent total enclosure shall be constructed to totally enclose the application stations, coating reservoirs, and all areas from the application station to the oven and the control device. If it can be demonstrated that there is no leakage between the coating application, the oven, and the control device and that the oven and control device are operated under negative pressure, they do not need to be enclosed.

   The permanent total enclosure shall be maintained under negative pressure whenever the emissions unit is in operation, and shall be designed and maintained to have an average facial velocity of air through each natural

draft opening of at least 200 feet per minute (3,600 m/hr). Compliance with the average facial velocity shall be demonstrated during the compliance test, by either using an air flow monitor or a differential pressure gauge at each natural draft opening, and maintaining the required facial velocity or the corresponding negative pressure. The permanent total enclosure shall meet all of the following criteria if the capture efficiency of the enclosure and control device is to be assumed to be 100%:
a. any natural draft opening shall be at least four equivalent opening diameters, or 4 times the diameter of the opening, from each VOC emitting point;

b. the total area of all natural draft openings shall not exceed 5 percent of the surface area of the enclosure's four walls, floor, and ceiling;

c. the direction of air flow through all natural draft openings shall be into the enclosure, with an average facial velocity of no less than 200 feet per minute (3,600 m/hr) or a pressure drop of 0.013 mm Hg (0.007 in. H2O);

d. all access doors and windows to the enclosure that do not meet the requirements of a natural draft opening and whose surface areas are not included in the 5 percent surface area determination in "b", shall be completely closed to any air movement during process operations; and

e. all VOC emissions shall be captured and contained for discharge through the control device.

3. The permanent total enclosure (PTE) serving this emissions unit shall be maintained in such a manner as to meet the criteria established for a permanent total enclosure in 40 CFR, Part 51, Appendix M, Reference Method 204, and shall capture all of the VOC emissions from this emissions unit.

4. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than 0.007 inch of water, as a 3-hour average, whenever the emissions unit is in operation.

C. **Monitoring and/or Record Keeping Requirements**

1. The permittee shall collect and record the following information each month for this emissions unit:

a. The name and identification of each coating and cleanup material employed;

b. The VOC content of each coating and cleanup material, in pounds per gallon, as applied;

c. The number of gallons of each coating and cleanup material employed; and,

d. The total VOC emissions from all coatings and cleanup materials employed, in pounds or tons [b x c x (1-overall control efficiency)].

2. The permittee shall properly install, operate, and maintain continuous temperature monitors and recorder(s) that measure and record(s) the temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit(s) is/are in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within + 1 percent of the temperature being measured or + 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals. Following compliance testing, the permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:

a. all 3-hour blocks of time, when the emissions unit(s) controlled by the catalytic incinerator was/were in operation, during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature measured during the most recent emissions test that demonstrated the emissions unit(s) was/were in compliance;

b. all 3-hour blocks of time, when the emissions unit(s) controlled by the catalytic incinerator was/were in operation, during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference measured during the most recent emissions test that demonstrated the emissions unit(s) was/were in compliance; and

c. a log or record of the operating time for the capture (collection) system, catalytic incinerator, monitoring equipment, and the associated emissions unit(s).

The permittee may use a temperature chart recorder or equivalent recording device as the log that documents the temperature differential across the catalyst bed.

3. The permittee shall collect and record the following information each month for the emissions units identified in term A.2.f:

a. the name and identification number of each coating, employed;

b. the individual Hazardous Air Pollutant (HAP) content for each HAP of each coating in pounds of individual HAP per gallon of coating, as applied;

c. the total combined HAP content of each coating in pounds of combined HAPs per gallon of coating, as applied [sum all the individual HAP contents from (b)];

d. the number of gallons of each coating employed;

e. the name and identification of each cleanup material employed;

f. the individual HAP content for each HAP of each cleanup material, in pounds of individual HAP per gallon of cleanup material, as applied;

g. the total combined HAP content of each cleanup material, in pounds of combined HAPs per gallon of cleanup material, as applied [sum all the individual HAP contents from (f)];

h. the number of gallons of each cleanup material employed;

i. the total individual HAP usage for each HAP from all coatings and cleanup materials employed, in pounds or tons per month [for each HAP the sum of (b) times (d) for each coating plus the sum of (f) times (h) for each cleanup material];

j. the total combined HAP usage from all coatings and cleanup materials employed, in pounds or tons per month [the sum of (c) times (d) for each coating plus the sum of (g) times (h) for each cleanup material];
the updated rolling, 12-month summation of usage for each individual HAP emissions**, in tons. This shall include the information for the current month and the preceeding eleven calender months {for each HAP, the sum of [(b) times (d) plus the sum of (f) times (h)] x [1- overall control efficiency]}. For calculating styrene emissions from coatings containing styrene, use an emission factor of 0.52 lb styrene emitted/lb styrene input in the above calculation.

l. the updated rolling, 12-month summation of usage for total combined HAP emissions**, in tons [the summation of each individual HAP emission from (k) above]. This shall include the information for the current month and the preceeding eleven calender months.

* A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Hamilton County Department of Environmental Services contact. This information does not have to be kept on a individual emissions unit basis.

** Assume that styrene is emitted at 52% of the total amount of styrene used (Composite Fabricators Association, 1997) .

Assume that all HAP(s), other than styrene, are emitted at rates the same as the amount of HAP(s) used.

4. The permittee shall measure, document/calculate, and maintain a permanent record of the following information for the permanent total enclosure, which may be the same record documented during the compliance test(s):

   a. the measured diameter of each natural draft opening;

   b. the distance measured from each natural draft opening to each VOC emitting point;

   c. the total calculated surface area of all natural draft openings and the surface area of the enclosure's four walls, floor, and ceiling;

   d. the calculation or demonstration that the distance from each VOC emitting point to each natural draft opening is at least 4 times the diameter of the opening; and

   e. the calculation demonstrating that the sum of the surface areas of all of the natural draft openings to the enclosure is not more than 5 percent of the sum of the surface areas of the enclosure's four walls, floor, and ceiling.

5. The permittee shall install, operate, and maintain monitoring devices and a recorder that continuously monitor and record the differential pressure between the inside and outside of the permanent total enclosure when the emissions unit is in operation. The monitoring and recording devices shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals, with any modifications deemed necessary by the permittee.

   The permittee shall collect and record the following information each day:

   a. all three-hour blocks of time during which the difference in pressure between the permanent total enclosure and the surrounding areas is not maintained at or above the minimum pressure differential of 0.007 inches of water, as a three-hour average; and

   b. a log or record of downtime for the capture (collection) system when the emissions unit was in operation.

6. In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable average temperature of the exhaust gases immediately before the catalyst bed, for any 3-hour block of time the emissions unit(s) controlled by the catalytic incinerator is/are in operation, shall not be more than 50 degrees Fahrenheit below the average temperature measured during the most recent emissions test that demonstrated the emissions unit(s) was/were in compliance. The acceptable average temperature difference across the catalyst bed, for any 3-hour block of time (when the emissions unit(s) is/are in operation), shall not be less than 80 percent of the average temperature difference measured during the most recent emissions test that demonstrated the emissions unit(s) was/were in compliance.

D. **Reporting Requirements**

1. The permittee shall notify the Hamilton County Department of Environmental Services in writing of any monthly record showing the use of noncomplying coatings or cleanup materials. The notification shall include a copy of such record and shall be sent to the Hamilton County Department of Environmental Services within 30 days following the end of the calendar month in which the noncomplying coatings were used.

2. The permittee shall submit quarterly summaries of the following records:

   a. all 3-hour blocks of time (when the emissions unit(s) was/were in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature established during the most recent emissions test that demonstrated the emissions unit was in compliance;

   b. all 3-hour blocks of time (when the emissions unit(s) was/were in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference established during the most recent emissions test that demonstrated the emissions unit(s) was/were in compliance;

   c. any records of downtime (date and length of time) for the capture (collection) system, the catalytic incinerator, and/or the monitoring equipment when the emissions unit(s) was/were in operation; and

d. a log of the operating time for the capture system, catalytic incinerator, monitoring equipment, and the emissions unit(s).

These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.

3. The permittee shall submit annual reports which identify any exceedances of the annual coating and/or cleanup material usage limitation in section B.1, as well as the corrective actions that were taken to achieve compliance. If no exceedances occurred during the reporting period, the permittee shall state so in the report. The permittee shall submit the reports to the Hamilton County Department of Environmental Services. These reports shall be submitted by January 31 of each year.

4. The permittee shall submit quarterly deviation (excursion) reports that identify all three-hour blocks of time, when the emissions unit was in operation, during which the permanent total enclosure was not maintained at the minimum pressure differential of 0.007 inches of water.

5. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit(s) was/were in operation and the VOC emissions were not vented to the catalytic incinerator. Each report shall be submitted within 30 days after the deviation occurs.

6. The permittee shall also submit annual reports that specify the total VOC emissions from this emissions unit for the previous calendar year. The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Synthetic Minor Fee Emission Report.

7. The permittee shall submit quarterly deviation (excursion) reports which identify any exceedance of the HAP emissions limitations set forth in term A.2.f. The notification shall include a copy of such record and shall be sent to the Hamilton County Department of Environmental Services. If no deviations occurred during the reporting period then the permittee shall state so in the report. The deviation reports shall be submitted in accordance with the quarterly reporting requirements in the General Terms and Conditions of this permit (i.e. January 31, April 30, July 31, and October 31 of each year for the previous calendar quarter; October through December, January through March, April through June, and July through September, respectively).

E. **Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the overall control efficiency and destruction efficiency limitations for VOC.

c. The test method(s) which must be employed to demonstrate compliance with the capture efficiency and control efficiency limitations for VOC are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Hamilton County Department of Environmental Services.

Method 25, 40 CFR Part 60, Appendix A

The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 3745-21-10 or an alternative test protocol approved by the Ohio EPA. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.
e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time (s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

f. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

2. Emission Limitation:
100% capture of VOC emissions

Applicable Compliance Method:

The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the 100% capture efficiency

requirement for the permanent total enclosure. The following test methods shall be employed:

Method 204 from 40 CFR Part 51 Appendix M; and
Method 2 from 40 CFR Part 60, Appendix A.

c. During the compliance demonstration for the permanent total enclosure, monitoring devices shall be installed to measure the average facial velocity of the air flow through each natural draft opening.

d. Method 2 from 40 CFR Part 60, Appendix A shall be conducted to determine the volumetric flow rate of the exhaust stream(s) exiting the permanent total enclosure, corrected to standard conditions. If the building is being used as the permanent total enclosure, it may be necessary to measure the volumetric flow, corrected to standard conditions, of each gas stream entering the "enclosure" through a forced makeup air duct, using Method 2. The facial velocity (FV) shall be calculated using the following equation:
FV= (Qo - Qi) /An

where:

Qo is the sum of the volumetric flow from all gas streams exiting the enclosure through an exhaust duct or hood;

Qi is the sum of the volumetric flow from all gas streams into the enclosure through a forced makeup air duct, and is equal to zero if there is no forced makeup air into the enclosure; and

An is the total area of all natural draft openings in the enclosure.

e. If the average facial velocity is measured at greater than 500 feet per minute (9,000 m/hr), the direction of air flow shall be assumed to be inward at all times during the compliance demonstration. If the average facial velocity is measured at less than 500 feet per minute, the continuous inward flow of air shall be verified at least once every 10 minutes for a minimum of 1 hour during the compliance demonstration, either by checking the flow or pressure meter(s) or through the use of streamers, smoke tubes, or tracer gases. All closed access doors and windows that are not considered natural draft openings shall also be checked once during the compliance demonstration for leakage around their perimeters using smoke tubes or tracer gases.

f. The permittee shall also measure and record the following information for the permanent total enclosure and each natural draft opening:

i. the diameter of each natural draft opening;

ii. the distance measured from each natural draft opening to each VOC emitting point in the process;

iii. the distance measured from each exhaust duct or hood in the enclosure to each natural draft opening;

iv. the total surface area of each natural draft opening and the surface area of the enclosure's four walls, floor, and ceiling; and

v. the ratio of the total surface area (sum) of all natural draft openings to the total surface area of the permanent total enclosure.

g. The testing shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA.

Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA's refusal to accept the results of the emission test(s).

3. USEPA methods 24 and 24A shall be used to determine the VOC content for (a) coatings and (b) flexographic and rotogravure printing lines and related coatings, respectively. If, pursuant to 40 CFR Part 60, Appendix A, an owner or operator determines that Method 24 or 24A cannot be used for a particular coating or ink, the permittee shall so notify the Administrator of the USEPA and shall use formulation data for that coating or ink to demonstrate compliance until the USEPA provides alternative analytical procedures or alternative precision statements for Method 24 or 24A. In lieu of Method 24, the permittee can use Method D6053-96 for any electrical insulating varnishes.

4. Compliance with the usage limitations in section B.1 shall be demonstrated by the record keeping in section C.1.

5. Compliance with the temperature restriction in section C.6 shall be demonstrated by the record keeping in section C.2.

6. Compliance with the HAP emission limitations in term A.2.f shall be demonstrated by the recordkeeping requirements in section C.3.

7. Compliance with the permanent total enclosure requirements specified in sections A.2.g, B.2, B.3 and B.4 shall be demonstrated by the recordkeeping requirements specified in sections C.4 and C.5.

8. Emission Limitation:
Volatile Organic Compound (VOC) emissions shall not exceed 0.13 lb/hr for coatings only.

Applicable Compliance Method:
The VOC emissions were calculated using the following equation:

lbs of VOC/hr = A x B x (1-C)

where;

A = maximum hourly coating usage = 0.106 gallon.
B = maximum VOC content of coatings = 6.23 lbs of VOC/gallon of coating.
C = overall control efficiency of catalytic oxidizer = 81% expressed as a decimal = 0.81.

9. Emission Limitation:
Volatile Organic Compound (VOC) emissions shall not exceed 0.88 TPY including cleanup.

Applicable Compliance Method:

The VOC emissions were calculated using the following equation:

TPY VOC = [A x B x (1-C) x ton/2000lbs] + (D x E x ton/2000lbs)

where;
A = maximum annual coating usage = 742 gallons.
B = maximum VOC content of coatings = 6.23 lbs of VOC/gallon of coating.
C = overall control efficiency of catalytic oxidizer = 81% expressed as a decimal = 0.81.
D = maximum annual cleanup material usage = 120 gallons.
E = maximum VOC content of cleanup material = 7.32 lbs of VOC/gallon.

F. **Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the "Toxic Air Contaminant Statute" in ORC 3704.03(F)(4)(b) was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.