

3745-21-24 Flat wood paneling coatings.

[Comment: For dates and availability of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see paragraph (JJ) of rule 3745-21-01 of the Administrative Code titled "referenced materials."]

(A) Applicability.

This rule shall apply to any facility that meets both of the following criteria:

- (1) The facility is located in Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, or Summit county.
- (2) The facility has total actual VOC emissions from all flat wood paneling coating lines that are equal to or greater than 15.0 pounds of VOC emissions per day, before the application of capture and control devices.

(B) Definitions.

The definitions applicable to this rule are contained in paragraphs (A), (B), and (FF) of rule 3745-21-01 of the Administrative Code.

(C) VOC emission control requirements.

(1) VOC content limitations.

The owner or operator of a facility that is subject to this rule shall not apply any flat wood paneling coating that exceeds the VOC content limitations specified in the following table:

Table - VOC content limitations

Categories	VOC Limitations (pounds per gallon, excluding water and exempt solvents)	VOC Limitations (pounds per gallon of solids)
Printed interior panels made of hardwood, plywood, or thin particleboard.	2.1	2.9
Natural finish hardwood plywood panels.	2.1	2.9
Class 2 finishes on hardboard panels.	2.1	2.9
Tileboard.	2.1	2.9
Exterior siding.	2.1	2.9

- (2) As an alternative to the VOC emission limitations specified in the table of this rule, the owner or operator of a facility may choose to vent all VOC emissions to a control device with a minimum overall control efficiency of ninety per cent, by

weight.

- (3) Except as otherwise provided by this rule, compliance with the limitations specified in paragraph (C)(1) of this rule is based upon a weighted average by volume of all coating materials employed in the coating line in any one day. The VOC contents and densities of the coating materials subject to paragraph (C)(1) of this rule shall be determined in accordance with paragraph (B) of rule 3745-21-10 of the Administrative Code. The VOC emission rate, capture efficiency and control efficiency for coating lines subject to paragraph (C) of this rule shall be determined in accordance with paragraph (C) of rule 3745-21-10 of the Administrative Code. The averaging of VOC emissions over two or more coating lines in order to demonstrate compliance with an applicable emission limitation (i.e., cross-line averaging) is prohibited except as otherwise provided in this rule.

(D) Application equipment.

The owner or operator of a facility shall not apply coatings to wood products subject to the provisions of this rule unless the coating is applied with properly operating equipment, in accordance with proper operating procedures, and by the use of one of the following methods:

- (1) Electrostatic application.
- (2) High volume, low pressure (HVLP) spray.
- (3) Hand roller.
- (4) Flow coat.
- (5) Roll coater.
- (6) Dip coat.
- (7) Paint brush.
- (8) Detailing or touch-up guns.

(E) Work practice standards.

The owner or operator of a facility using VOC-containing materials in any flat wood paneling coating line shall ensure that VOC emissions are minimized by incorporating the following procedures:

- (1) Store all VOC coatings, thinners, and cleaning materials in closed containers.
- (2) Minimize spills of VOC containing coatings and thinners, and cleanup any spills immediately.
- (3) Convey any coating, thinners, and cleaning materials in closed containers or pipes.
- (4) Keep mixing vessels that contain VOC coatings or other materials closed except when

specifically in use.

(5) Minimize emissions of VOC during cleaning of storage, mixing and conveying equipment.

(F) Recordkeeping and reporting.

(1) Any owner or operator of a flat wood paneling coating line which is exempt from the emission limitations specified in paragraph (C) of this rule because the combined VOC emissions from all flat wood paneling coating lines at the facility are less than 15.0 pounds of VOC per day (before add-on controls) shall collect and record the information each day and maintain the following information at the facility for a period of three years:

(a) The name and identification number of each coating, as applied.

(b) The mass of VOC per volume (including water and exempt solvents) and the volume of each coating (including water and exempt solvents), as applied, used each day.

(c) The total VOC emissions at the facility, as calculated using the following equation:

$$T = \sum_{i=1}^n A_i B$$

where:

T = Total VOC emissions from the combined flat wood paneling coating lines before the application of capture systems and control devices, in units of pounds per day.

n = Number of different coatings applied in the flat wood paneling coating lines at the facility.

i = Subscript denoting an individual coating.

A_i = Mass of VOC per volume of coating (i) (including water and exempt solvents), as applied, used at the facility, in units of pounds VOC per gallon.

B_i = Volume of coating (i) (including water and exempt solvents), as applied, used at the facility, in units of gallons per day. The instrument or method by which the owner or operator accurately measured or calculated the volume of each coating, as applied, shall also be described in the certification to the director.

- (2) Any owner or operator of a flat wood paneling coating line referenced in paragraph (F)(1) of this rule shall notify the director of any daily record showing that the combined VOC emissions from all such flat wood paneling coating lines at the facility are equal to or greater than 15.0 pounds of VOC per day (before add-on controls). A copy of such record shall be sent to the director within forty-five days after the exceedance occurs.
- (3) Any owner or operator of a flat wood paneling coating line who elects to demonstrate the ongoing status of compliance with the applicable emission limitation by means of the use of complying coatings (i.e., each coating complies with the applicable emission limitation as applied) as specified in paragraph (C)(1) of this rule, shall collect and record the following information each month and maintain the information at the facility for a period of three years:
 - (a) The name and identification number of each coating, as applied.
 - (b) The mass of VOC per volume of each coating (excluding water and exempt solvents), as applied.

This information does not have to be kept on a line-by-line basis. Also, if an owner or operator mixes complying coatings at a coating line, it is not necessary to record the VOC content of the resulting mixture.
- (4) Any owner or operator of a flat wood paneling coating line referenced in paragraph (F)(3) of this rule shall notify the director of any monthly record showing the use of noncomplying coatings. A copy of such record shall be sent to the director within thirty days following the end of the calendar month.
- (5) Any owner or operator of a flat wood paneling coating line who elects to demonstrate the ongoing status of compliance with the applicable emission limitation as specified in paragraph (C)(1) of this rule by means of a daily volume-weighted average VOC content shall collect and record the following information each day for the coating line and maintain the information at the facility for a period of three years:
 - (a) The name and identification number of each coating, as applied.
 - (b) The mass of VOC per volume (excluding water and exempt solvents) and the volume of each coating (excluding water and exempt solvents), as applied.
 - (c) The daily volume-weighted average VOC content of all coatings, as applied, calculated in accordance with the equation specified in paragraph (B)(9) of rule 3745-21-10 of the Administrative Code for $(C_{\text{voc},2})_A$.
- (6) Any owner or operator of a flat wood paneling coating line referenced in paragraph (F)(5) of this rule shall notify the director of any daily record showing that the daily volume-weighted average VOC content exceeds the applicable emission limitation. A copy of such record shall be sent to the director within forty-five days after the exceedance occurs.

- (7) Any owner or operator of a flat wood paneling coating line who elects to demonstrate the ongoing status of compliance with the applicable pounds of VOC per gallon of solids limitation by means of control equipment shall collect and record the following information each day for the flat wood paneling coating line and maintain the information at the facility for a period of three years:
- (a) The name and identification number of each coating used.
 - (b) The mass of VOC per unit volume of coating solids, as applied, the volume solids content, as applied, and the volume, as applied, of each coating.
 - (c) The maximum VOC content (mass of VOC per unit volume of coating solids, as applied) or the daily volume-weighted average VOC content (mass of VOC per unit volume of coating solids, as applied) of all the coatings.
 - (d) The calculated, controlled VOC emission rate, in mass of VOC per unit volume of coating solids, as applied. The controlled VOC emission rate shall be calculated using the following:
 - (i) Either the maximum VOC content or the daily volume-weighted VOC content recorded in accordance with paragraph (F)(7)(c) of this rule.
 - (ii) The overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the source was in compliance.
 - (e) A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated coating line.
 - (f) For thermal incinerators, all three-hour periods of operation during which the average combustion temperature was more than fifty degrees Fahrenheit below the average combustion temperature during the most recent performance test that demonstrated that the source was in compliance.
 - (g) For catalytic incinerators, all three-hour periods of operation during which the average temperature of the process vent stream immediately before the catalyst bed is more than fifty degrees Fahrenheit below the average temperature of the process vent stream during the most recent performance test that demonstrated that the source was in compliance, and one of the following:
 - (i) All three-hour periods of operation during which the average temperature difference across the catalyst bed is less than eighty per cent of the average temperature differences during the most recent performance test that demonstrated that the source was in compliance.
 - (ii) Records required by an inspection and maintenance plan for the catalytic incinerator that meets paragraph (H)(2)(b)(iv) of this rule.
 - (h) For regenerative carbon adsorbers, the following:

- (i) All periods of the carbon bed regeneration cycle during which the total desorbing gas mass flow recorded during the regeneration cycle was less than the minimum value established during the most recent performance test that demonstrated that the source was in compliance.
 - (ii) All periods of the carbon bed regeneration cycle when the carbon bed temperature recorded after the cooling cycle exceeded the maximum value established during the most recent performance test that demonstrated that the source was in compliance.
- (i) For control devices that include a concentrator, the following:
- (i) All three-hour periods of operation during which the average desorption concentrate stream gas temperature was below the average desorption concentrate stream gas temperature during the most recent performance test that demonstrated that the source was in compliance.
 - (ii) All three-hour periods of operation during which the average pressure drop of the dilute stream across the concentrator was below the average pressure drop of the dilute stream across the concentrator during the most recent performance test that demonstrated that the source was in compliance.
- (j) For a capture system that is a permanent total enclosure, one of the following:
- (i) All three-hour periods of operation during which the average pressure drop across the enclosure was below 0.007 inch of water.
 - (ii) All three-hour periods of operation during which the average facial velocity of air through all natural draft openings was below two hundred feet per minute.
- (k) For a capture system that is not a permanent total enclosure, one of the following:
- (i) All three-hour periods of operation during which the average duct static pressure was below the average duct static pressure during the most recent performance test that demonstrated that the source was in compliance.
 - (ii) All three-hour periods of operation during which the average gas volumetric flow rate was below the average gas volumetric flow rate during the most recent performance test that demonstrated that the source was in compliance.
- (8) Any owner or operator of a flat wood paneling coating line referenced in paragraph (F)(7) of this rule shall notify the director of any daily record showing that the calculated, controlled VOC emission rate exceeds the applicable pounds of VOC per gallon of solids limitation. A copy of such record shall be sent to the director within forty-five days after the exceedance occurs.
- (9) Any owner or operator of a flat wood paneling coating line who elects to demonstrate the ongoing status of compliance with the applicable capture and control efficiency

requirements or overall control efficiency requirements contained in paragraph (C)(2) of this rule shall collect and record the following information each day for the control equipment and maintain the information at the facility for a period of three years:

- (a) A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated coating line.
- (b) For thermal incinerators, all three-hour periods of operation during which the average combustion temperature was more than fifty degrees Fahrenheit below the average combustion temperature during the most recent performance test that demonstrated that the source was in compliance.
- (c) For catalytic incinerators, all three-hour periods of operation during which the average temperature of the process vent stream immediately before the catalyst bed is more than fifty degrees Fahrenheit below the average temperature of the process vent stream during the most recent performance test that demonstrated that the source was in compliance, and one of the following:
 - (i) All three-hour periods of operation during which the average temperature difference across the catalyst bed is less than eighty per cent of the average temperature differences during the most recent performance test that demonstrated that the source was in compliance.
 - (ii) Records required by an inspection and maintenance plan for the catalytic incinerator that meets paragraph (H)(2)(b)(iv) of this rule.
- (d) For regenerative carbon adsorbers, the following:
 - (i) All periods of the carbon bed regeneration cycle during which the total desorbing gas mass flow recorded during the regeneration cycle was less than the minimum value established during the most recent performance test that demonstrated that the source was in compliance.
 - (ii) All periods of the carbon bed regeneration cycle when the carbon bed temperature recorded after the cooling cycle exceeded the maximum value established during the most recent performance test that demonstrated that the source was in compliance.
- (e) For control devices that include a concentrator, the following:
 - (i) All three-hour periods of operation during which the average desorption concentrate stream gas temperature was below the average desorption concentrate stream gas temperature during the most recent performance test that demonstrated that the source was in compliance.
 - (ii) All three-hour periods of operation during which the average pressure drop of the dilute stream across the concentrator was below the average pressure drop of the dilute stream across the concentrator during the most recent

performance test that demonstrated that the source was in compliance.

(f) For a capture system that is a permanent total enclosure, one of the following:

- (i) All three-hour periods of operation during which the average pressure drop across the enclosure was below 0.007 inch of water.
- (ii) All three-hour periods of operation during which the average facial velocity of air through all natural draft openings was below two hundred feet per minute.

(g) For a capture system that is not a permanent total enclosure, one of the following:

- (i) All three-hour periods of operation during which the average duct static pressure was below the average duct static pressure during the most recent performance test that demonstrated that the source was in compliance.
- (ii) All three-hour periods of operation during which the average gas volumetric flow rate was below the average gas volumetric flow rate during the most recent performance test that demonstrated that the source was in compliance.

(10) Any owner or operator of a flat wood paneling coating line referenced in paragraphs (F)(7) and (F)(9) of this rule shall submit to the director quarterly summaries of the records required by paragraphs (F)(7)(e) to (F)(7)(k) and (F)(9)(a) to (F)(9)(g) of this rule. These quarterly reports shall be submitted by April thirtieth, July thirty-first, October thirty-first, and January thirty-first, and shall cover the records for the previous calendar quarters.

(11) Any owner or operator of a flat wood paneling coating line referenced in paragraphs (F)(7) and (F)(9) of this rule shall install and operate continuous monitoring and recording devices (i.e., for temperature or VOC concentration) and, if necessary, perform emission tests for the coating line to enable the recordkeeping required by paragraphs (F)(7)(f) to (F)(7)(k) and (F)(9)(b) to (F)(9)(g) of this rule. The continuous monitoring and recording devices shall be installed and placed in operation either by April 2, 2010 for any flat wood paneling coating line for which installation commenced before April 2, 2009 or by the initial startup of any new control equipment installed for the flat wood paneling coating line to achieve compliance with the VOC control requirements of this rule for any flat wood paneling coating line for which installation commenced on or after April 2, 2009. The continuous monitoring and recording devices shall be capable of accurately measuring the desired parameter, and the owner or operator shall properly operate and maintain the devices in accordance with the manufacturer's recommendations.

(G) Compliance test methods for coatings.

(1) The VOC content and solids content of a coating shall be determined by the owner or operator in accordance with paragraph (B) of rule 3745-21-10 of the Administrative Code, wherein formulation data or USEPA method 24 procedures (which include

various ASTM measurement methods) may be employed.

- (2) The VOC content, in pounds VOC per gallon of coating, excluding water and exempt solvents, shall be calculated in accordance with the equation specified in paragraph (B)(8) of rule 3745-21-10 of the Administrative Code for $C_{\text{voc},2}$.
 - (3) The VOC content, in pounds VOC per gallon of solids, shall be calculated in accordance with the equation specified in paragraph (B)(8) of rule 3745-21-10 of the Administrative Code for $C_{\text{voc},3}$.
 - (4) The daily volume-weighted average VOC content of all coatings, as applied in pounds VOC per gallon of coating, shall be calculated in accordance with the equation specified in paragraph (B)(9) of rule 3745-21-10 of the Administrative Code for $(C_{\text{voc},2})_A$.
 - (5) The daily volume-weighted average VOC content of all coatings, as applied in pounds VOC per gallon of solids, shall be calculated in accordance with the equation specified in paragraph (B)(9) of rule 3745-21-10 of the Administrative Code for $C_{\text{voc},3}$.
- (H) Compliance tests for VOC emission control systems.
- (1) For a VOC emission control system used to comply with paragraph (C)(2) of this rule, the owner or operator shall conduct a compliance test to determine the capture efficiency of the capture system, the control efficiency of the control device (or each control device if a combination of control devices is employed), and the overall control efficiency of the VOC emission control system in accordance with paragraph (C) of rule 3745-21-10 of the Administrative Code wherein USEPA method 25 or 25A shall be used for determining the concentration of VOC in a gas stream.
 - (2) During the compliance test described in paragraph (H)(1) of this rule that demonstrates compliance, the owner or operator shall establish the operating limits (operating parameter values) for the monitoring devices as follows:
 - (a) If the control device is a thermal oxidizer, establish the operating limit as follows:
 - (i) Monitor and record the combustion temperature either in the firebox of the thermal oxidizer or immediately downstream of the firebox before any substantial heat exchange occurs at least once every fifteen minutes during each of the three runs of the compliance test.
 - (ii) Calculate and record the average combustion temperature maintained during the compliance test. This average combustion temperature is the minimum operating limit for the thermal oxidizer.
 - (b) If the control device is a catalytic oxidizer, establish the operating limits according to either paragraphs (H)(2)(b)(i) and (H)(2)(b)(ii) or paragraphs

(H)(2)(b)(iii) and (H)(2)(b)(iv) of this rule.

- (i) Monitor and record the temperature just before the catalyst bed and the temperature difference across the catalyst bed at least once every fifteen minutes during each of the three test runs comprising a compliance test.
 - (ii) Calculate and record the average temperature just before the catalyst bed and the average temperature difference across the catalyst bed maintained during the compliance test. These are the minimum operating limits for the catalytic oxidizer.
 - (iii) Monitor and record the temperature just before the catalyst bed at least once every fifteen minutes during each of the three test runs of the compliance test. Use this recorded temperature data to calculate and record the average temperature before the catalyst bed during the performance test. This is the minimum operating limit for the catalytic oxidizer.
 - (iv) An inspection and maintenance plan shall be developed, maintained on-site, and made readily available upon the request of the appropriate Ohio EPA district office or local air agency. The plan shall include, at a minimum, the following:
 - (a) Annual sampling and analysis of the catalyst activity (i.e., conversion efficiency) following the manufacturer's or catalyst supplier's recommended procedures.
 - (b) Monthly inspection of the oxidizer system including the burner assembly and fuel supply lines for problems.
 - (c) Annual internal and monthly external visual inspection of the catalyst bed to check for channeling, abrasion, and settling. If problems are found, corrective action consistent with the manufacturer's recommendations shall be implemented and a new performance test to determine destruction efficiency in accordance with paragraph (C) of this rule shall be conducted.
 - (d) Records, and a description of the results of each inspection and catalyst activity analysis.
- (c) If the control device is a regenerative carbon adsorber, establish the operating limits as follows:
- (i) Monitor and record the total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each regeneration cycle, and the carbon bed temperature after each carbon bed regeneration and cooling cycle for the regeneration cycle either immediately preceding or immediately following the compliance test.
 - (ii) The operating limits for the regenerative carbon adsorber are the minimum

total desorbing gas mass flow recorded during the regeneration cycle and the maximum carbon bed temperature recorded after the cooling cycle.

- (d) If the control device includes a concentrator, establish operating limits for the concentrator as follows:
 - (i) Monitor and record the desorption concentrate stream gas temperature at least once every fifteen minutes during each of the three runs of the compliance test.
 - (ii) Use the data collected during the compliance test to calculate and record the average temperature. This is the minimum operating limit for the desorption concentrate gas stream temperature.
 - (iii) Monitor and record the pressure drop of the dilute stream across the concentrator at least once every fifteen minutes during each of the three runs of the performance test.
 - (iv) Use the data collected during the compliance test to calculate and record the average pressure drop. This is the minimum operating limit for the pressure drop of the dilute stream across the concentrator.
- (e) If the capture system is a permanent total enclosure, the operating limit is either one of the following, based on the criteria of a permanent total enclosure:
 - (i) The pressure drop across the enclosure shall be at least 0.007 inch of water.
 - (ii) The average facial velocity of air through all natural draft openings shall be at least two hundred feet per minute.
- (f) If the capture system is a not a permanent total enclosure, establish an operating limit for each separate capture device in the capture system as follows:
 - (i) Monitor and record either the gas volumetric flow rate or the duct static pressure for each separate capture device in the emission capture system at least once every fifteen minutes during each of the three test runs of the compliance test for capture efficiency at a point in the duct between the capture device and the control device inlet.
 - (ii) Calculate and record the average gas volumetric flow rate or average duct static pressure for the three test runs for each capture device. This average gas volumetric flow rate or average duct static pressure is the minimum operating limit for that specific capture device.

(I) Compliance dates.

- (1) The owner or operator of a facility that is subject to this rule shall comply with this rule no later than the following dates:
 - (a) For any flat wood paneling coating line located in Ashtabula, Cuyahoga, Geauga,

Lake, Lorain, Medina, Portage, or Summit county for which installation commenced before April 2, 2009, the compliance date of the flat wood paneling coating line is April 2, 2010 or date of initial startup of the operation, whichever is later.

- (b) For any flat wood paneling coating line located in Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, or Summit county for which installation commenced on or after April 2, 2009, the compliance date of the flat wood paneling coating line is the initial startup date of the flat wood paneling coating line.

(J) Applicability notification, compliance certification, and permit application.

- (1) The owner or operator of a facility that is subject to this rule, is located in Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, or Summit county, and that has a flat wood paneling coating line with an initial startup date before April 2, 2009 shall notify the Ohio EPA district office or local air agency in writing that the flat wood panel coating line is subject to this rule. The notification, which shall be submitted not later than June 1, 2009 (or within sixty days after the flat wood paneling coating line becomes subject to this rule), shall provide the information specified in paragraph (J)(3) of this rule.
- (2) The owner or operator of a facility that is subject to this rule, is located in Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, or Summit county, and that has a flat wood panel coating line with an initial startup date on or after April 2, 2009 shall notify the Ohio EPA district office or local air agency in writing that the flat wood paneling coating line is subject to this rule. The notification, which shall be submitted not later than either the date of initial startup of the flat wood paneling coating line or by June 1, 2009, whichever is later, and shall provide the information listed under paragraph (J)(3) of this rule. The application for an installation permit under rule 3745-31-02 of the Administrative Code may be used to fulfill the notification requirements of this paragraph.
- (3) The notification required in paragraphs (J)(1) and (J)(2) of this rule shall include the following information:
 - (a) Name and address of the owner or operator.
 - (b) Address (i.e., physical location) of the affected facility.
 - (c) Equipment description and Ohio EPA emissions unit number (if assigned) of the flat wood paneling coating operation.
 - (d) Identification of the VOC emission requirement, the means of compliance and the compliance date for the flat wood paneling coating operation.
 - (e) An application for an operating permit or an application for a modification to an operating permit in accordance with Chapter 3745-77 of the Administrative Code (for sources subject to the Title V permit program) or an application for a

permit-to-install and operate or an application for a modification to a permit-to-install and operate in accordance with Chapter 3745-31 of the Administrative Code (for sources not subject to the Title V permit program) for each subject process that meets one of the following:

- (i) The process does not possess an effective operating permit or permit-to-install and operate.
 - (ii) The process possesses an effective operating permit or permit-to-install and operate and the owner or operator cannot certify in writing to the director that such subject process is in compliance with this rule. An application for an operating permit or permit-to-install and operate is not required provided the subject process is operating under an effective permit and certifies compliance. Such certification shall include all compliance certification requirements under paragraphs (F) to (H) of this rule.
- (K) Requirements for an owner or operator of a flat wood paneling coating line that determines they are not subject to paragraphs (B) to (J) of this rule.

When establishing that the facility's total actual VOC emissions from all of the flat wood paneling coating lines (before the application of capture systems and control devices) are less than 15.0 pounds of VOCs per day, the owner or operator shall maintain the following daily records:

- (1) The total gallons of each flat wood paneling coating employed.
- (2) The VOC content of each flat wood paneling coating employed.
- (3) The total daily VOC emissions (summation of gallons x VOC content (in pounds per gallon) for all flat wood paneling coating employed).

Replaces: 3745-21-24

Effective: 10/15/2015

Five Year Review (FYR) Dates: 07/13/2020

CERTIFIED ELECTRONICALLY

Certification

10/05/2015

Date

Promulgated Under: 119.03
Statutory Authority: 3704.03(E)
Rule Amplifies: 3704.03(A), 3704.03(E)
Prior Effective Dates: 4/2/09, 5/12/11