

REGULATION 7.58 Standard of Performance for New Factory Surface Coating Operations of Flat Wood Paneling

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of surface coating emissions from new wood panel facilities.

SECTION 1 Applicability

This regulation applies to each affected facility commenced on or after May 20, 1981. Any source that is ever subject to this regulation will always be subject to it unless the source changes its process to one not covered by this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

- 2.1 "Affected facility" means a coating line for the factory surface coating of interior flat wood paneling.
- 2.2 "Applicator" means the mechanism or device used to apply the coating including, but not limited to, roll coaters, curtain coaters, sprays and brushes.
- 2.3 "Class II hardboard paneling finishes" means finishes which meet the specifications of Voluntary Product Standard PS-59-73, filed by reference in 401 KAR 50:015, as approved by the American National Standards Institute.
- 2.4 "Classification date" means the effective date of this regulation.
- 2.5 "Coating line" means one or more coating applicators and any associated flashoff area, drying area, and/or oven wherein a coating is applied, dried, and/or cured. A coating line ends with the end of the drying or curing area prior to the beginning of the application of the next coating. It is not necessary to have an oven or a flashoff area in order to be included in this definition. This shall include, but is not limited to:
 - 2.5.1 Mixing operations;
 - 2.5.2 Process storage;
 - 2.5.3 Applicators;
 - 2.5.4 Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;
 - 2.5.5 Clean up operations;
 - 2.5.6 Leaks, spills and disposal of VOCs; and
 - 2.5.7 Processing and handling of recovered VOCs.
- 2.6 "Flashoff area" means the space between the applicator and the oven.
- 2.7 "Hardboard" means a panel manufactured primarily from inter- felted lignocellulosic fibers

- which are consolidated under heat and pressure in a hot-press.
- 2.8 "Hardwood plywood" means the plywood surface layer is a veneer of hardwood.
 - 2.9 "Interior flat wood paneling" means printed interior wall panels made of hardwood plywood and thin particle board, natural finish hardwood plywood panels, or hardboard paneling with Class II finishes.
 - 2.10 "Natural finish hardwood plywood panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.
 - 2.11 "Particle board" means a manufactured board made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure. Thin particle board has a thickness of 1/4 inch or less.
 - 2.12 "Printed panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.
 - 2.13 "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds; but does not mean storage tanks which are subject to Regulation 6.13 or 7.12.
 - 2.14 "Volatile organic compounds net input" means the total amount of VOCs input to the affected facility minus the amount of VOCs that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by use of control devices shall not be subtracted from the total for the purposes of determining VOC net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

SECTION 3 Standard for Volatile Organic Compounds

No person shall cause, allow, or permit an affected facility to discharge into the atmospheres more than 15% by weight of the VOC net input into the affected facility.

SECTION 4 Compliance

- 4.1 In all cases, the design of any control system is subject to approval by the District.
- 4.2 Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device. The control system capture efficiency shall be measured according to methods specified in Regulation 1.05.
- 4.3 With the prior approval of the District, the owner or operator may elect to effect such changes in the facility as are necessary to qualify for an exemption under Section 5.
- 4.4 Whenever deemed necessary by the District, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6.
 - 4.4.1 EPA Method 24 shall be used to determine the VOC content of coatings.

SECTION 5 Exemption

Any affected facility shall be exempt from Section 3 if the total VOC content of all the coatings applied to a specific area of finished paneling product is:

- 5.1 Less than 2.9 kg/100 sq m of VOCs of coated surface (6.0 lb/1000 sq ft) for printed interior wall panels made of hardwood plywood and thin particle board;
- 5.2 Less than 5.8 kg/100 sq m of VOCs of coated surface (12.0 lb/1000 sq ft) for natural finish hardwood plywood panels; or
- 5.3 Less than 4.8 kg/100 sq m of VOCs of coated surface (10.0 lb/1000 sq ft) for Class II finishes for hardboard paneling. Volatile organic compound content values are expressed in units of mass of VOC (kg,lb) per area of surface to which the coating is applied (100 m², 1000ft²), excluding water and exempt solvents.
- 5.4 No owner or operator of a flat wood paneling surface coating line subject to this section shall apply coating on any such line, during any day, whose daily-weighted average VOC content, calculated in accordance with section 5.4.1, exceeds the emission limit in this section. Equivalency calculations must be done on a solids applied basis.
- 5.4.1 The daily weighted average VOC content, which means the VOC content of two or more coatings as applied on a coating line during any day and weighted according to the fraction of the total coating volume that each coating represents, shall be calculated using the following equation:

$$VOC_w = \sum_{i=1}^n \frac{V_i C_i}{VT}$$

where:

- VOC_w = The average VOC content of two or more coatings as applied each day on a coating line in units of kg VOC/l of coating (lb/gal) minus water and exempt solvents.
- V_i = The volume of each coating as applied each day on a coating line in units of liters (gallons) minus water and exempt solvents.
- C_i = The VOC content of each coating as applied each day on a coating line in units of kg VOC/l of coating (lb/gal) minus water and exempt solvents.
- VT = The total volume of all coatings as applied each day on a coating line in units of liters (gallons) minus water and exempt solvents.
- n = The number of different coatings as applied each day on a coating line.

SECTION 6 Recordkeeping

- 6.1 An owner or operator of a stationary source using coatings, solvents, and/or graphic arts materials and subject to this regulation shall maintain daily records of operations for the

most recent two year period. The records shall be made available to the District, Cabinet, or EPA upon request. The records shall include, but not be limited to, the following:

- 6.1.1 The rule number applicable to the operation for which the records are being maintained;
- 6.1.2 The application method and substrate type (metal, plastic, etc.);
- 6.1.3 The amount and type of coatings, (including catalyst and reducer for multicomponent coatings), solvent, and/or exempt compounds;
- 6.1.4 The VOC content as applied in each coating, solvent, and/or graphic arts material;
- 6.1.5 The date for each application of coating, solvent, and/or graphic arts material;
- 6.1.6 The amount of surface preparation, clean-up, wash-up of solvent (including exempt compounds) used and the VOC content of each; and
- 6.1.7 Oven temperature, where applicable.
- 6.2 VOC content shall be calculated using a percent solids basis (less water and exempt solvents) for coating, and inks; using EPA Method 24.
- 6.3 When a source utilizes add-on controls to achieve compliance, documentation will be necessary to assure proper operation. Examples of some controls and related information are:
 - 6.3.1 Thermal incineration - combustion temperature, inlet and outlet VOC concentration from emission tests, how and when these concentrations were determined, destruction or removal efficiency and manufacturer data;
 - 6.3.2 Catalytic incineration - exhaust gas temperature, change in temperature across catalyst bed, date of last change of catalyst bed, inlet and outlet VOC concentration from emission test, how and when these concentrations were determined, destruction or removal efficiency, and manufacturer data;
 - 6.3.3 Condenser - inlet temperature of cooling medium, outlet temperature of cooling medium, inlet and outlet VOC concentration from emission tests, how and when these concentrations were determined, removal efficiency, and manufacturer data; and
 - 6.3.4 When a source utilizes add-on controls, compliance shall be determined by using EPA Method 25.

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