

## **REGULATION 6.16     Standard of Performance for Existing Large Appliance Surface Coating Operations**

### **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 emissions from surface coating operations at large appliance manufacturing facilities.

#### **SECTION 1   Applicability**

This regulation applies to each affected facility which was in being or had a construction permit issued by the District before the effective date of this regulation. Any source that is ever subject to this regulation shall 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 them in Regulation 1.02.

- 2.1 "Affected facility" means a coating line for large appliances including but not limited to: doors, cases, lids, panels, and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dish washers, trash compactors, and air conditioners.
- 2.2 "Applicator" means the mechanism or device used to apply the coating, including but not limited to dipping or spraying.
- 2.3 "Coating line" means a series of one or more coating applicators and any associated flash off 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 or prior to the beginning of the application of the next coating. It is not necessary to have an oven or a flash off area in order to be included in this definition. This shall include, but is not limited to:
  - 2.3.1 Mixing operations;
  - 2.3.2 Process storage;
  - 2.3.3 Applicators;
  - 2.3.4 Drying operations including flash off area operation, oven drying, baking, curing, and polymerization;
  - 2.3.5 Clean up operations;
  - 2.3.6 Leaks, spills and disposal of volatile organic compounds; and
  - 2.3.7 Processing and handling of recovered volatile organic compounds.
- 2.4 "Flash off area" means the space between the applicator and the oven.
- 2.5 "Prime coat" means the first film of coating applied in a multi-coat operation.

- 2.6 "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds or recovered volatile organic compounds, but does not mean storage tanks which are subject to Regulation 6.13.
- 2.7 "Single coat" means a single film coating applied directly to the metal substance omitting the prime coat.
- 2.8 "Topcoat" means the final film of coating applied in a two-coat operation or the coatings which are applied after the prime coat in a multi-coat operation.
- 2.9 "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 the 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 emissions shall apply.

### **SECTION 3 Standard for Volatile Organic Compounds**

No person shall cause, allow or permit an affected facility to discharge into the atmosphere more than 15% by weight of the VOCs input into the affected facility unless said person has qualified for an exemption pursuant to section 5.

### **SECTION 4 Compliance**

- 4.1 In all cases, the design of any control device 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 which the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined by the District based upon an engineering analysis 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 requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control system or any part of the system. The control system capture efficiency shall be measured according to methods specified in Regulation 1.05 section 2.
- 4.3 With the prior approval of the District, the owner or operator may elect to effect such changes in the affected 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 coating used at an affected facility to verify that the coating meets the requirements in section 5. EPA reference Method 24 shall be used to determine the VOC content of coatings.

### **SECTION 5 Exemptions**

- 5.1 Any affected facility shall be exempt from the provisions of section 3 if the VOC content of the coatings is less than 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water and exempt solvents, delivered to the applicators associated with the prime, single or topcoat coating line.
- 5.2 Repair coating operations for the purpose of repairing scratches and nicks that occur during assembly shall be exempt from the provision of section 3.

5.3 No owner or operator of a large appliance surface coatings line subject to this section shall apply coatings on any such line, during any day whose daily-weighted average VOC content, calculated in accordance with the procedure specified in section 5.3.1, exceeds the emission limit in this section. Equivalency calculations must be done on a solids applied basis.

5.3.1 The daily weighted average VOC content, which means the VOC content of two or more coatings as applied on a coatings 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:

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

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.

$n$  = The number of different coatings as applied each day on a coating line.

$V_i$  = 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.

$V_t$  = The total volume of all coatings as applied each day on a coating line in units of liters (gallons), minus water and exempt solvents.

5.4 The exemptions specified in this section may be achieved by the use of a low solvent coating as defined in section 5.1.

## SECTION 6 Recordkeeping

6.1 Effective May 15, 1991, an owner or operator of a stationary source subject to this rule shall maintain daily records of operations. These records shall accumulate for two years and shall then be reduced to the most recent running two year period. The records shall be made available to the District, State air pollution control agency, 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, paper, etc.);

6.1.3 The amount and type of adhesive, coatings (including catalyst and reducer for multicomponent coatings), solvent, and/or graphic arts material used at each point of application, including exempt compounds;

6.1.4 The VOC content as applied in each adhesive, coating, solvent, and/or graphic arts material;

6.1.5 The date for each application of adhesive, 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 The oven temperature when an oven is part of the coating line.

- 6.2 VOC content shall be calculated using a percent solids basis (less water and exempt solvents) for adhesives, 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; and
  - 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.
  - 6.3.4 When a source utilizes add-on controls, compliance shall be determined by using EPA Method 25.

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