

REGULATION 6.31. Standard of Performance for Existing Miscellaneous Metal parts and Products 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 existing metal parts and products manufacturing.

SECTION 1 Applicability

The provisions of this regulation shall apply to each affected facility commenced before May 20, 1981. Any source that is ever subject to the provisions of this regulation will always be subject to these provisions, unless the source changes its process to one not covered by this regulation.

SECTION 2 Definitions

As used in this regulation, all terms not defined herein shall have the meaning given to them in Regulation 1.02.

- 2.1 "Affected facility" means a coating line located at job shops and original equipment manufacturing industries which applies coatings on metal substrate riot elsewhere subject to regulation in this chapter.
- 2.2 "Air-Dried coatings It means a coating that is dried by the use of air or forced warm air at temperatures up to 90° C (194°F).
- 2.3 "Applicator" means the mechanism or device used to apply the coating, including, but not limited to: dipping, spraying, or flow-coating.
- 2.4 "Clear Coat" means a coating which either lacks color or opacity, or which is transparent and uses the surface to which it is applied as a reflectant base or undertone color.
- 2.5 "Coating line" means a series of 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 t-he 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 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 volatile organic compounds, and
- 2.5.7 Processing and handling-of recovered volatile organic compounds;
- 2.6 "Flashoff area" means the space between the applicator and the oven.
- 2.7 "Heat sensitive material" means materials which cannot be exposed to temperatures greater than 93 degrees C (200 degrees F).
- 2.8 "Miscellaneous metal parts and products" means items including but not limited to:
 - 2.8.1 Large farm machinery (harvesting, fertilizing and planting machines, tractors, combines, etc.);
 - 2.8.2 Small farm machinery (lawn and garden tractors, lawn mowers, rototillers, etc.);
 - 2.8.3 Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.).
 - 2.8.4 Commercial machinery (computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);
 - 2.8.5 Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);
 - 2.8.6 Fabricated metal products (metal covered doors, frames, etc.); and
 - 2.8.7 Any other industrial category which coats metal parts or products under the Standard Industrial Classification Code of Major Group 33 (primary metal industries), Major Group 34 (fabricated metal products), Major Group 35 (nonelectric machinery), Major Group 36 (electrical machinery), Major Group 37 (transportation equipment), Major Group 38 (miscellaneous instruments), and Major Group 39 (miscellaneous manufacturing

industries).

- 2.9 "Outdoor or harsh exposure or extreme environmental conditions" means exposure to any of the following: year round weather conditions, temperatures consistently above 95 degrees Celsius, detergents, scouring solvents, corrosive atmospheres and similar environmental conditions.
- 2.10 "Prime coat" means- the first of two or more films of coating applied in an operation.
- 2.11 "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 or 7.12.
- 2.12 "Single coat" means only one film of coating is applied to the metal substrate.
- 2.13 "Topcoat" means the final film or series of films of coating applied in a two coat (or more) operation.
- 2.14 "Volatile organic compounds net input" means the total amount of volatile organic compounds input to the affected facility minus the amount of volatile organic compounds 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 volatile organic compound 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 percent by weight of the volatile organic compounds 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 3.0 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, 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 5.0.
- 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 5.0.

4.1.1 The method of analysis for coatings is EPA method 24.

SECTION 5 Exemptions

- 5.1 Any affected facility shall be exempt from the provision of Section 3.0 if the volatile organic compound content of the coating is:
 - 5.1.1 Less than 0.52 kg/l of coating (4.3 lb/gal), excluding water and exempt solvents, delivered to applicators associated with clear coat;
 - 5.1.2 Less than 0.42 kg/l of coating (3.5 lb/gal), excluding water and exempt solvents, delivered to applicators with air-dried items or items subject to outdoor or harsh exposure or extreme environmental conditions;
 - 5.1.3 Less than 0.05 kg/l of powder coating (0.4 lb/gal) delivered to applicators associated with no or infrequent color change, or a small number of colors applied; or ,
 - 5.1.4 Less than 0.36 kg/l of coating (3-0 lb/gal), excluding water and exempt solvent, delivered to applicators associated with [color coat or first coat on untreated ferrous substrate; or] all other coatings.
- 5.2 For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within paragraph 5.1 above, during the same day (e.g., all coatings used on the line are subject to 0.42 g/l (3.5 lb/gal), the daily weighted VOC content., calculate in accordance with the procedure specified in subsection 5.2, shall not exceed the coating VOC content limit corresponding to the category of coating used.
 - 5.2.1 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:

$$\text{VOC}_W = (\text{sum of } V_i C_i) / V_T \text{ from } i=1 \text{ to } n$$

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; and

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.

5.3 The surface coating of the following metal parts and products are exempt from this regulation:

5.3.1 The exterior of airplanes and marine vessels, but not parts for the exterior of airplanes and marine vessels that are coated as a separate manufacturing or coating operation;

5.3.2 Automobile refinishing; and

5.3.3 Customized top coating of automobiles and trucks, if production is less than 35 vehicles per day.

5.4 Any affected facility shall be exempt from the provisions of Section 3.0 if the total volatile organic compound emissions from all affected facilities subject to this regulation are less than or equal to 5 tons per year (potential emissions prior to any add on controls).

SECTION 6 Recordkeeping

6.1 An owner or operator of a stationary source using coatings, or solvents, and subject to this rule shall maintain daily records of operations for the most recent two year period. The records shall be made available to the District 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) and solvent used at each point of application including- exempt compounds;
- 6.1.4 The VOC content as applied in each coating and solvent;
- 6.1.5 The date for each application of coating and solvent;
- 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 The VOC content shall be calculated using a percent solids basis (less water and exempt solvents) for coatings using EPA reference 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.
 - 6.3.4 When a source utilizes add-on controls, compliance shall be determined by using EPA reference method 25.

SECTION 7 Deviations

Deviation with the standards and limitations contained in this regulation, when supported by adequate technical information, will be considered by the District on a case-by-case basis to allow for technological or economic circumstances which are unique to a source. However, these deviations will require federal approval in a manner pursuant to Regulation 1.08, Section 4.0.

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