

**SUBPART SS - Standards of Performance for Industrial Surface Coating:  
Large Appliances** (Delegation Effective 4/24/84:  
Rev. Effective 11/3/92)

**RULE 260.450. APPLICABILITY AND DESIGNATION OF AFFECTED FACILITY**

(a) The provisions of this subpart apply to each surface coating operation in a large appliance surface coating line.

(b) The provisions of this subpart apply to each affected facility identified in Section (a) of this rule that commences construction, modification, or reconstruction after December 24, 1980.

**RULE 260.451. DEFINITIONS**

All terms used in this subpart not defined below are given the meaning in the Act or in Subpart A of this Regulation.

(a) "**Applied Coating Solids**" means the coating solids that adhere to the surface of the large appliance part being coated.

(b) "**Large Appliance Part**" means any organic surface-coated metal lid, door, casing, panel, or other interior or exterior metal part or accessory that is assembled to form a large appliance product. Parts subject to in-use temperatures in excess of 250°F are not included in this definition.

(c) "**Large Appliance Product**" means any organic surface-coated metal range, oven, microwave oven, refrigerator, freezer, washer, dryer, dishwasher, water heater, or trash compactor manufactured for household, commercial, or recreational use.

(d) "**Large Appliance Surface Coating Line**" means that portion of a large appliance assembly plant engaged in the application and curing of organic surface coatings on large appliance parts or products.

(e) "**Coating Application Station**" means that portion of the large appliance surface coating operation where a prime coat or a topcoat is applied to large appliance parts or products (e.g., dip tank, spray booth, or flow coating unit).

(f) "**Curing Oven**" means a device that uses heat to dry or cure the coating(s) applied to large appliance parts or products.

(g) "**Electrodeposition**" (EDP) means a method of coating application in which the large appliance part or product is submerged in a tank filled with coating material suspended in water and an electrical potential is used to enhance deposition of the material on the part or product.

(h) "**Flashoff Area**" means the portion of a surface coating line between the coating application station and the curing oven.

(i) "**Organic Coating**" means any coating used in a surface coating operation, including dilution solvents, from which VOC emissions occur during the application or the curing process. For the purpose of this subpart, powder coatings are not included in this definition.

(j) "**Powder Coating**" means any surface coating that is applied as a dry powder and is fused into a continuous coating film through the use of heat.

(k) "**Spray Booth**" means the structure housing automatic or manual spray application equipment where a coating is applied to large appliance parts or products.

(l) "**Surface Coating Operation**" means the system on a large appliance surface coating line used to apply and dry or cure an organic coating on the surface of large appliance parts or products. The surface coating operation may be a prime coat or a topcoat operation and includes the coating application station(s), flashoff area, and curing oven.

(m) "**Transfer Efficiency**" means the ratio of the amount of coating solids deposited onto the surface of a large appliance part or product to the total amount of coating solids used.

(n) "**VOC Content**" means the proportion of a coating that is volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of coating solids.

(o) "**VOC Emissions**" means the mass of volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of applied coating solids, emitted from a surface coating operation.

All symbols used in this subpart not defined below are given the meaning in the Act or Subpart A of this Regulation.

$C_a$  = the concentration of VOC's in a gas stream leaving a control device and entering the atmosphere (parts per million by volume, as carbon).

$C_b$  = the concentration of VOC's in a gas stream entering a control device (parts per million by volume, as carbon).

$C_f$  = the concentration of VOC's in a gas stream emitted directly to the atmosphere (parts per million by volume, as carbon).

$D_c$  = density of coating (or input stream), as received (kilograms per liter).

$D_d$  = density of a VOC-solvent added to coatings (kilograms per liter).

- $D_r$  = density of a VOC-solvent recovered by an emission control device (kilograms per liter).
- $E$  = the VOC destruction efficiency of a control device (fraction).
- $F$  = the proportion of total VOC's emitted by an affected facility that enters a control device (fraction).
- $G$  = the volume-weighted average mass of VOC's in coatings consumed in a calendar month per unit volume of applied coating solids (kilograms per liter)
- $L_c$  = the volume of coating consumed, as received (liters).
- $L_d$  = the volume of VOC-solvent added to coatings (liters).
- $L_r$  = the volume of VOC-solvent recovered by an emission control device (liters).
- $L_s$  = the volume of coating solids consumed (liters).
- $M_d$  = the mass of VOC-solvent added to coatings (kilograms).
- $M_o$  = the mass of VOC's in coatings consumed, as received (kilograms).
- $M_r$  = the mass of VOC's recovered by an emission control device (kilograms).
- $N$  = the volume-weighted average mass of VOC's emitted to the atmosphere per unit volume of applied coating solids (kilograms per liter).
- $Q_a$  = the volumetric flow rate of a gas stream leaving a control device and entering the atmosphere (dry standard cubic meters per hour).
- $Q_b$  = the volumetric flow rate of a gas stream entering a control device (dry standard cubic meters per hour).
- $Q_f$  = the volumetric flow rate of a gas stream emitted directly to the atmosphere (dry standard cubic meters per hour).
- $R$  = the overall VOC emission reduction achieved for an affected facility (fraction).
- $T$  = the transfer efficiency (fraction).
- $V_s$  = the proportion of solids in a coating (or input stream), as received (fraction by volume).
- $W_o$  = the proportion of VOC's in a coating (or input stream), as received (fraction by weight).

**RULE 260.452. STANDARD FOR VOLATILE ORGANIC COMPOUNDS**

On or after the date on which the performance test required by Rule 260.8 is completed, no owner or operator of an affected facility subject to the provisions of this subpart shall discharge or cause the discharge of VOC emissions that exceed 0.90 kilogram of VOC's per liter of applied coating solids from any surface coating operation on a large appliance surface coating line.

**RULE 260.453. PERFORMANCE TEST AND COMPLIANCE PROVISIONS**

The owner or operator of an affected facility shall conduct performance tests and provide compliance calculations as specified in Part 60, Chapter I, Title 40, Code of Federal Regulations, Section 60.453.

**RULE 260.454. MONITORING OF EMISSIONS AND OPERATIONS**

(a) The owner or operator of an affected facility that uses a capture system and an incinerator to comply with the emission limits specified under Rule 260.452 shall install, calibrate, maintain, and operate temperature measurement devices as prescribed below:

(1) Where thermal incineration is used, a temperature measurement device shall be installed in the firebox. Where catalytic incineration is used, a temperature measurement device shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Each temperature measurement device shall be installed, calibrated, and maintained according to the manufacturer's specifications. The device shall have an accuracy of the greater of 0.75 percent of the temperature being measured expressed in degrees Celsius or  $\pm 2.5^{\circ}\text{C}$ .

(3) Each temperature measurement device shall be equipped with a recording device so that a permanent continuous record is produced.

**RULE 260.455. REPORTING AND RECORDKEEPING REQUIREMENTS.**  
(Rev. Effective 11/3/92)

(a) The reporting requirements of Rule 260.8(a) apply only to the initial performance test. Each owner or operator subject to the provisions of this subpart shall include the following data in the report of the initial performance test required under Rule 260.8(a):

(1) Except as provided in Subsection (a)(2) of this rule, the volume-weighted average mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) for a period of one calendar month from each affected facility.

(2) For each affected facility where compliance is determined under the provisions of Rule 260.453(b)(1)(iv), a list of the coatings used during a period of one calendar month, the VOC content of each coating calculated from data determined using Reference Method 24 or supplied by the coating manufacturer, and the minimum transfer efficiency of any coating application equipment used during the month.

(3) For each affected facility where compliance is achieved through use of an incineration system, the following additional information will be reported:

(i) The proportion of total VOC's emitted that enters the control device (F).

(ii) The VOC reduction efficiency of the control device (E).

(iii) The average combustion temperature (or the average temperature upstream and downstream of the catalyst bed), and

(iv) A description of the method used to establish the amount of VOC's captured and sent to the incinerator.

(4) For each affected facility where compliance is achieved through use of a solvent recovery system, the following additional information will be reported:

(i) The volume of VOC-solvent recovered ( $L_r$ ), and

(ii) The overall VOC emission reduction achieved (R).

(b) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit a written report, as specified in Rule 260.7(c), to the Control Officer every calendar quarter of each instance in which the volume-weighted average of the total mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) is greater than the limit specified under Rule 260.452. If no such instances have occurred during a particular quarter, a report stating this shall be submitted to the Control Officer semiannually.

(c) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and report semiannually to the Control Officer the following:

(1) Where compliance with Rule 260.452 is achieved through use of thermal incineration, each 3-hour period of coating operation during which the average temperature of the device was more than 28°C below the average temperature of the device during the most recent performance test at which destruction efficiency was determined as specified under Rule 260.453.

(2) Where compliance with Rule 260.452 is achieved through the use of catalytic incineration, each 3-hour period of coating operation during which the average temperature recorded immediately before the catalyst bed is more than 28°C below the average temperature at the same location during the most recent performance test at which destruction efficiency was determined as specified under Rule 260.453.

Additionally, all 3-hour periods of coating operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference across the catalyst bed during the most recent performance test at which destruction efficiency was determined as specified under Rule 260.453 will be recorded.

(3) For thermal and catalytic incinerators, if no such periods as described in Subsections (c)(1) and (c)(2) of this rule occur, the owner or operator shall state this in the report.

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source for a period of at least two years, records of all data and calculations used to determine VOC emissions from each affected facility. Where compliance is achieved through the use of thermal incineration, each owner or operator shall maintain at the source daily records of the incinerator combustion chamber temperature. If catalytic incineration is used, the owner or operator shall maintain at the source daily records of the gas temperature, both upstream and downstream of the incinerator catalyst bed. Where compliance is achieved through the use of a solvent recovery system, the owner or operator shall maintain at the source daily records of the amount of solvent recovered by the system for each affected facility.

#### **RULE 260.456 TEST METHODS AND PROCEDURES**

Performance tests shall be conducted as specified in Part 60, Chapter I, Title 40, Code of Federal Regulations, Section 60.456.