

SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT

RULE 67.11.1 - LARGE COATING OPERATIONS FOR WOOD PRODUCTS

(Adopted & Effective 9/25/02)

(a) **APPLICABILITY**

(1) Except as otherwise provided in Section (b), this rule is applicable to a stationary source where the combined uncontrolled emissions of VOCs from all wood product coating operations, including emissions from equipment cleaning, are greater than or equal to 25 tons in a calendar year.

(2) Any coating operation subject to the requirements of Rules 67.0 or 67.18 shall not be subject to this rule.

(3) Rule 66 shall not apply to any coating operation which is subject to this rule.

(b) **EXEMPTIONS**

(1) The provisions of Sections (d), (e), and (f) shall not apply to coatings applied using non-refillable handheld aerosol spray containers.

(2) The provisions of Subsection (d)(1) shall not apply to the following:

(i) Any coatings when applied by the use of air brushes with a coating capacity of two ounces (59.1 ml) or less.

(ii) Any coatings when applied during touch-up operations.

(3) The provisions of Subsection (d)(2) shall not apply to coatings applied to wooden musical instruments.

(c) **DEFINITIONS**

For the purposes of this rule, the following definitions shall apply:

(1) **"Adhesive"** means a material applied to a wood surface for the sole purpose of bonding the wood surface with another wood or non-wood surface by attachment.

(2) **"Binder"** means a non-volatile polymeric organic material, such as a resin, which forms the surface film during coating applications.

(3) **"Clear Sealer"** means a coating which contains binders, but not opaque pigments, and is specifically formulated to seal wood surfaces prior to the application of subsequent coatings.

(4) **"Clear Topcoat"** means a final coating which contains binders, but not opaque pigments, and is specifically formulated to form a transparent or translucent

solid protective film. Clear topcoats include clear lacquers and varnishes, but exclude conversion varnishes.

(5) **"Coating"** means a material containing more than 20 grams per liter of VOC as applied, less water and exempt compounds, which can be applied as a thin layer to a substrate, and which either dries or cures to form a continuous solid film or impregnates a substrate for protection, decorative, or functional purposes. Such materials include, but are not limited to paints, varnishes, sealers, lacquers, inks, fillers, washcoats, toners and stains but exclude any adhesives.

(6) **"Coating Operation"** means all steps involved in the application, drying and/or curing of surface coatings, including touch-up operations, and associated stripping, surface preparation and coating application equipment cleaning.

(7) **"Conversion Varnish"** means a topcoat which is comprised of a homogeneous liquid (alkyd-amino resin), which when acid catalyzed and applied, hardens by evaporation and polymerization.

(8) **"Dip Coat"** means a coating application method accomplished by dipping an object into the coating material.

(9) **"Electrostatic Spray"** means a coating application method accomplished by charging atomized paint particles for deposition by electrostatic attraction.

(10) **"Exempt Compound"** means the same as defined in Rule 2.

(11) **"Filler"** means a material used to fill in cracks, grains and imperfections of wood before applying a coating.

(12) **"Flow Coat"** means a coating application method accomplished by flowing a stream of coating over an object.

(13) **"Glaze Stain"** means a semi-transparent tinted coating applied on a previously coated surface to produce a decorative effect.

(14) **"Hand-Application Method"** means a coating application method accomplished by applying a coating by manually held, non-mechanically operated equipment. Such equipment includes paintbrushes, hand rollers, rags, and sponges.

(15) **"High-Solid Stain"** means a stain containing more than one pound of solids per gallon of material.

(16) **"High-Volume Low-Pressure (HVL) Spray"** means a coating application method which uses pressurized air at a permanent pressure between 0.1 and 10.0 psig, not to exceed 10.0 psig, measured at the air cap of the coating application system.

(17) **"Ink"** means a liquid that contains dyes and/or colorants and is used to make markings, but not to protect surfaces.

(18) "**Low-Solids Coating**" means a coating containing one pound of solids or less per gallon of material, as supplied.

(19) "**Low-Solids Stain**" means a stain containing one pound of solids or less per gallon.

(20) "**Medium Density Fiberboard (MDF) Coating**" means the initial coating which is applied directly to the surface of MDF, which is a wood product composed of tightly compressed wood fibers bonded with resins, and has a density greater than 45 pounds per cubic foot.

(21) "**Multi-Colored Coating**" means a coating which exhibits more than one color when applied and which is packaged in a single container and applied in a single coat.

(22) "**Pigmented Primer, Sealer, and Undercoat**" means opaque coatings which contain binders and colored pigments formulated to hide the wood surface, that are applied prior to the topcoat to provide a firm bond, level the wood product surface, or seal the wood product surface.

(23) "**Pigmented Topcoat**" means a final opaque coating which contains binders and colored pigments, and is specifically formulated to hide the wood surface and form a solid protective film.

(24) "**Roll Coat**" means a coating application method accomplished by rolling a coating onto a flat surface using a roll applicator.

(25) "**Stationary Source**" means the same as defined in Rule 2.

(26) "**Stripper**" means a liquid applied to remove a coating or coating residue.

(27) "**Toner**" means a coating which contains not more than one pound of binders and dyes or pigments per gallon of coating and which is used to add tint to a coated surface.

(28) "**Touch-up Operation**" means the portion of a coating operation which is incidental to the main coating process but necessary to cover minor imperfections or minor mechanical damage incurred prior to intended use, or to achieve coverage as required.

(29) "**Transfer Efficiency**" means the ratio of the weight of coating solids adhering to the part being coated to the weight of coating solids used in the application process expressed as a percentage.

(30) "**Uncontrolled VOC Emissions**" means VOC emissions from a wood products coating operation, which occurred or would have occurred in the absence of any air pollution control equipment added or process modification made on or after September 25, 2002.

(31) **"Volatile Organic Compound (VOC)"** means the same as defined in Rule 2.

(32) **"VOC Content Per Pound of Coating Solids"** means the weight of VOC per weight of coating solids in any given coating volume of coating and can be calculated by the following equation:

$$C_s = \frac{W_s - W_w - W_{es}}{W_r}$$

where:

C_s	=	VOC content per pound of coating solids
W_s	=	Weight of volatile compounds, in pounds
W_w	=	Weight of water, in pounds
W_{es}	=	Weight of exempt compounds, in pounds
W_r	=	Weight of coating solids, in pounds

(33) **"VOC Content Per Volume of Coating, Less Water and Exempt Compounds"** means the same as defined in Rule 2.

(34) **"VOC Content Per Volume of Material"** means the same as defined in Rule 2.

(35) **"Washcoat"** means a coating containing not more than one pound of solids per gallon, which is used to seal wood surfaces, prevent undesired staining and control penetration. A washcoat may also be used to provide a barrier coat when paper laminates are applied to the wood surface, or when glazes are applied during the coating operation.

(36) **"Wood Products"** means any objects that are made of or primarily fabricated with solid wood, wood composition, bamboo and/or rattan, including furnishings, art objects, tables, chairs, beds, sofas, and shutters and cabinets which are not permanently attached to stationary structures at the time of coating.

(d) **STANDARDS**

(1) Application Methods

Except as provided in Subsection (b)(2), a person shall not apply coatings unless one of the following application methods is used:

- (i) Hand-application method, or
- (ii) Dip coat, or
- (iii) Roll coat, or
- (iv) Flow coat, or
- (v) Electrostatic coat, or
- (vi) High-volume low-pressure (HVLP) coat, or

(vii) Other coating application methods that are demonstrated to have a transfer efficiency at least equal to one of the above application methods, and which are operated in such a manner that the parameters under which they were tested are permanent features of the method. Such coating application methods shall be approved in writing by the Air Pollution Control Officer prior to use.

(2) VOC Limits

(i) Except as provided in Section (b), a person shall not apply any coating to a new wood product with a VOC content in excess of the following limits, expressed as either grams of VOC per liter of coating (g/L), or pounds of VOC per gallon of material (lb/gal), as applied, less water and exempt compounds, or pounds of VOC per pound of solids (lb/lb), as applied:

<u>CATEGORY</u>	<u>VOC LIMITS</u>		
	<u>g/L</u>	<u>lb/gal</u>	<u>lb/lb</u>
Clear Sealers	550	4.6	1.39
Clear Topcoats	550	4.6	1.37
Conversion Varnishes	550	4.6	1.37
Fillers	500	4.2	0.66
High-Solid Stains	550	4.6	1.23
Inks	500	4.2	0.96
Medium Density Fiberboard (MDF) Coatings	635	5.3	1.90
Multi-Colored Coatings	685	5.7	2.60
Pigmented Primers, Sealers & Undercoats	550	4.6	1.06
Pigmented Topcoats	550	4.6	1.10
Any Other Coatings	420	3.5	0.51

A person may add up to 10% by volume of VOC to a topcoat, primer, sealer or undercoat that contains acetone, if at the time of application the relative humidity is greater than 70% and the temperature is below 65° F, provided that

(A) The coating is not applied during a period from April 1 to October 31 of any year; and

(B) Prior to the addition of VOC, the coating does not contain more than 550 grams of VOC per liter of coating, less water and exempt compounds.

(ii) Except as provided in Section (b), a person shall not apply the following coatings to a new wood product with a VOC content in excess of the following limits expressed either as grams of VOC per liter of material or pounds of VOC per gallon of material, as applied:

<u>CATEGORY</u>	<u>VOC LIMITS</u>	
	<u>g/L</u>	<u>lb/gal</u>
Low-Solids Stains, Toners, and Washcoats	480	4.0
Any Other Low-Solids Coatings	480	4.0

The requirements of Subsection (d)(2) may be met using an Alternative Emission Control Plan (AECPP) that has been approved pursuant to Rule 67.1.

(3) Surface Preparation Materials

A person shall not use VOC containing materials for surface preparation, including stripping, unless:

- (i) The material contains 200 grams or less of VOC per liter of material; or
- (ii) The material has an initial boiling point of 190°C (374°F) or greater; or
- (iii) The total VOC vapor pressure of the material is 20 mm Hg or less at 20°C (68°F).

(4) Cleaning of Coating Application Equipment

A person shall not use VOC containing materials for the cleaning of application equipment used in operations subject to this rule unless:

- (i) The cleaning material contains 200 grams or less of VOC per liter of material; or
- (ii) The cleaning material has an initial boiling point of 190°C (374°F) or greater; or
- (iii) The cleaning material has a total VOC vapor pressure of 20 mm Hg or less at 20°C (68°F); or
- (iv) The cleaning material is flushed or rinsed through the application equipment in a contained manner that will minimize evaporation into the atmosphere; or
- (v) The application equipment or equipment parts are cleaned in a container which is open only when being accessed for adding, cleaning, or removing application equipment or when cleaning material is being added, provided the cleaned equipment or equipment parts are drained to the container until dripping ceases; or
- (vi) A system is used that totally encloses the component parts being cleaned during the washing, rinsing, and draining processes; or
- (vii) Other application equipment cleaning methods that are demonstrated to be as effective as any of the equipment described above in minimizing the emissions of VOC to the atmosphere, provided that the device has been tested and approved in writing prior to use by the Air Pollution Control Officer.

(5) No person shall require for use or specify the application of a coating subject to this rule if such use or application results in a violation of this rule. This prohibition shall apply to all written or oral contracts under the terms of which any coating is applied to any wood product at any location within San Diego County.

(6) Spray application equipment shall not be used to dispose of waste coatings or solvents into the air.

(e) CONTROL EQUIPMENT

(1) In lieu of complying with the provisions of Subsections (d)(2), (d)(3), and/or (d)(4) of this rule, a person may use an air pollution control system which:

(i) Has been installed in accordance with an Authority to Construct; and

(ii) Includes an emission collection system which captures organic gaseous emissions, including emissions associated with applicable coating operations, and/or equipment cleaning and surface preparation operations, and transports the captured emissions to an air pollution control device; and

(iii) Has a combined emissions capture and control device efficiency of at least 85% by weight or an alternate emission control efficiency equivalent to or greater than the level of control achieved by complying with the applicable VOC limits specified in Subsections (d)(2), (d)(3), and (d)(4). The alternate emission control efficiency shall be calculated according to a procedure approved in advance by the Air Pollution Control Officer and U.S. Environmental Protection Agency (EPA); and

(iv) Has a continuous monitoring system installed, operated, calibrated and maintained, as approved by the Air Pollution Control Officer. The continuous monitoring system shall monitor and record all key system operating parameters necessary to ensure compliance with Subsection (e)(1)(iii) above at least every 15 clock minutes or a shorter period of time as determined necessary by the Air Pollution Control Officer. Compliance with Subsection (e)(1)(iii) may be determined by VOC emissions source testing and/or evaluating continuous monitoring data.

(2) A person electing to use an air pollution control system pursuant to Section (e)(1) shall submit to the Air Pollution Control Officer for approval an Operation and Maintenance plan for the proposed emission control device and emission collection system and receive approval prior to operation of the control equipment. Thereafter, the plan can be modified with Air Pollution Control Officer approval, as necessary, to ensure compliance. Such plan shall:

(i) Identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1)(iii) such as temperature, pressure, and/or flow rate; and

(ii) Include proposed inspection schedules, anticipated ongoing maintenance, and proposed recordkeeping practices regarding the key system operating parameters.

(3) Upon approval of the Air Pollution Control Officer, a person subject to the requirements of Section (e) shall implement the Operation and Maintenance plan and shall comply with the provisions of the approved plan thereafter.

(f) **RECORDKEEPING**

All records required by this rule shall be retained onsite for at least five years and be made available to the District upon request.

(1) Any person subject to the provisions of Subsection (d)(2), (d)(3), and/or (d)(4) of this rule shall maintain records in accordance with the following:

(i) Maintain a current list of coatings, strippers, surface preparation and cleaning materials in use which provides all of the VOC data necessary to evaluate compliance, including but not limited to:

(A) The manufacturer name and identification for each coating or coating component for multi-component coatings (this includes any components such as bases, catalysts, thinners or reducers, when supplied in separate containers), stripper, surface preparation, and cleaning material; and

(B) Mix ratio of components; and

(C) VOC content expressed in either grams per liter, as applied, less water and exempt compounds, pounds per gallon, as applied, less water and exempt compounds, or pounds per pound of solids; vapor pressure; and/or initial boiling point, as applicable, for each coating, or coating component for multi-component coatings, stripper, surface preparation and cleaning material; and

(D) For each coating or coating component that contains VOCs and water or exempt compounds and that is used in a mixture with other VOC containing materials, or is a low-solids stain, toner, washcoat, or other low-solids coating, the weight of VOC per volume of material expressed in either grams per liter or pounds per gallon, volume percent water and exempt compounds; and

(E) Other information that the Air Pollution Control Officer finds is necessary to determine compliance with the VOC content standards of Subsections (d)(2), (d)(3) or (d)(4) of this rule.

(ii) Maintain current documentation to demonstrate applicability of any coating category pursuant to Subsection (d)(2) of this rule.

(iii) At a minimum, maintain monthly records of the amount of each coating or each coating component for multi-component coatings used.

(iv) At a minimum, maintain monthly records of the amount of each stripper, surface preparation and cleaning material used.

(v) Maintain records of the dates and amounts of material added to coating dip tanks.

(2) For each material that is not in compliance with Subsections (d)(2), (d)(3), and (d)(4) maintain daily usage records for all coatings, thinners, and other VOC containing materials.

(3) Any person using control equipment pursuant to Section (e) of this rule shall:

(i) Maintain records in accordance with Subsection (f)(1); and

(ii) For all coatings, strippers, surface preparation and/or cleaning materials not in compliance with Subsection (d)(2), (d)(3), or (d)(4) of this rule, maintain daily records of the amount of each coating or each coating component for multi-component coatings, stripper, surface preparation and cleaning material used; and

(iii) Maintain records of all monitoring pursuant to Subsection (e)(1)(iv) and all other data necessary to demonstrate compliance with control requirements as determined by the Air Pollution Control Officer.

(g) TEST METHODS

(1) Perfluorocarbon (PFC) compounds shall be assumed to be absent from a coating, cleaning, or surface preparation material subject to this rule unless a manufacturer of the material or facility operator identifies the specific individual compound(s) and the amount(s) present in the material and provides an EPA and Air Resources Board approved test method which can be used to quantify the specific compounds.

(2) Measurements of transfer efficiency subject to Subsection (d)(1)(vii) of this rule shall be conducted in accordance with the South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User," as it exists on September 25, 2002.

(3) Measurement of the VOC content of coatings, surface preparation and cleaning materials subject to Subsections (d)(2), (d)(3)(i), or (d)(4)(i) of this rule shall be conducted in accordance with EPA Test Method 24 (40 CFR 60, Appendix A).

(4) Measurement of the VOC content of ultraviolet radiation-cured coatings subject to Subsection (d)(2) of this rule shall be conducted in accordance with ASTM Standard Test Method D5403-93 (1998), or its most current version. Measurement of the water content and exempt solvent content, if applicable, shall be conducted and reported in accordance with ASTM Standard Test Methods D3792-99, D4017-02 and D4457-02, or their most current versions.

(5) Measurement of the initial boiling point of cleaning and surface preparation materials subject to Subsections (d)(3)(ii) or (d)(4)(ii) of this rule shall be conducted in accordance with ASTM Standard Test Method D1078-01, or its most current version, for distillation range of volatile organic liquids.

(6) Calculation of total VOC vapor pressure for materials subject to Subsections (d)(3)(iii) or (d)(4)(iii) of this rule shall be conducted in accordance with the District's "Procedures for Estimating the Vapor Pressure of VOC Mixtures." If the vapor pressure of the liquid mixture, as calculated by this procedure, exceeds the limits specified in Subsections (d)(3)(iii), or (d)(4)(iii)) the vapor pressure shall be determined in accordance with ASTM Standard Test Method D2879-97, or its most current version. The solvent composition shall be determined using ASTM Standard Practice E168-99, E169-99, or E260-96 (2001), or their most current versions. The fraction of water and exempt compounds in the liquid phase shall be determined by using ASTM Standard Test Methods D3792-99, or D4017-02 and D4457-02, or their most current versions, and shall be used to calculate the partial pressure of water and exempt compounds. The results of vapor pressure measurements obtained using ASTM Test Method D2879-97, or its most current version shall be corrected for partial pressure of water and exempt compounds.

(7) Measurement of solvent losses from alternate application cleaning equipment subject to Subsection (d)(4)(vii) shall be conducted and reported in accordance with the South Coast Air Quality Management District's "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," as it exists on September 25, 2002.

(8) Measurement of the emission collection system capture efficiency subject to Subsection (e)(1)(iii) of this rule shall be determined according to EPA Method 204 and Method 204A-F "Capture Efficiency" (40 CFR 51, Appendix M) and EPA's "Guidelines for Determining Capture Efficiency" dated January 9, 1995, using a protocol approved in writing by the Air Pollution Control Officer. Subsequent to the initial compliance demonstration period, applicable key system operating parameters, as approved by the Air Pollution Control Officer, may be used as verification that capture efficiency has not diminished.

(9) Measurements of control device efficiency subject to Subsection (e)(1) of this rule shall be conducted in accordance with EPA Methods 25A and/or 18 (40 CFR 60, Appendix A) and in accordance with a protocol approved in writing by the Air Pollution Control Officer.

(10) Determination of the solids content of coatings shall be conducted in accordance with EPA Test Method 24 (40 CFR 60, Appendix A).