

RULE 67.11 WOOD PRODUCTS COATING OPERATIONS
(Effective: 3/14/89; Rev. Effective: 6/27/95)

(a) **APPLICABILITY**

(1) Except as otherwise provided in Section (b), this rule is applicable to all wood products coating operations

(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 the following:

(i) A stationary source which applies less than 500 gallons of coatings to wood products in every consecutive twelve-month period. It shall be the responsibility of any person claiming this exemption to maintain monthly purchase and monthly or daily usage records. These records shall be maintained on-site for three years and made available to the District upon request.

(ii) 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 Subsections (d)(2) and (d)(3) 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 a surface film during coating applications.

(3) **"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.

(4) **"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 dries or cures to form a continuous solid film, including but not limited to any paint, ink, sealer, varnish, or lacquer, and excluding any adhesives. Coating also includes stains, inks, fillers, washcoats, and toners.

(5) **"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.

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

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

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

(9) **"Exempt Compound"** means any of –

(i) the following compounds:

1,1,1-trichloroethane,
methylene chloride, (dichloromethane),
trichlorofluoromethane (CFC-11),
dichlorodifluoromethane (CFC-12),
trifluoromethane (HFC-23),
trichlorotrifluoroethane (CFC-113),
dichlorotetrafluoroethane (CFC-114),
chloropentafluoroethane (CFC-115),
chlorodifluoromethane (HCFC-22),
dichlorotrifluoroethane (HCFC-123),
dichlorofluoroethane (HCFC-141b),
1,1,1,2-tetrafluoroethane (HFC-134a),
1,1,2,2-tetrafluoroethane (HFC-134),
chlorodifluoroethane (HCFC-142b),
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124),
pentafluoroethane (HFC-125),

1,1,1-trifluoroethane (HFC-143a),
1,1-difluoroethane (HFC-152a),

- (ii) the following linear volatile methyl siloxane (VMS) compounds:
hexamethyldisiloxane (MM),
octamethyltrisiloxane (MDM),
decamethyltetrasiloxane (MD₂M),
dodecamethylpentasiloxane (MD₃M),
tetradecamethylhexasiloxane (MD₄M),
dimethyl silicones and siloxanes (MD_xM),
- (iii) the following cyclic volatile methyl siloxane (VMS) compounds:
hexamethylcyclotrisiloxane (D₃),
octamethylcyclotetrasiloxane (D₄),
decamethylcyclopentasiloxane (D₅),
dodecamethylcyclohexasiloxane (D₆),
cyclopolydimethylsiloxanes (D_x),
- (iv) the following branched volatile methyl siloxane (VMS) compounds:
1,1,1,3,5,5,5-heptamethyl-3-[(trimethylsilyl)oxy]-trisiloxane (M₃T),

1,1,1,5,5,5-hexamethyl-3,3-bis[(trimethylsilyl)oxy]-trisiloxane (M₄Q),
pentamethyl[(trimethylsilyl)oxy]cyclotrisiloxane (MD₃),
- (v) the following four classes of perfluorocarbon (PFC) compounds:
cyclic, branched, or linear, completely fluorinated alkanes,
cyclic, branched, or linear, completely fluorinated ethers with no unsaturations,
cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations, and
sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

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

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

(12) "**Glaze Stain**" means a semitransparent tinted coating applied on a previously coated surface to produce a decorative effect.

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

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

(15) "**High-Volume Low-Pressure (HVLP) 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.

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

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

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

(19) "**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.

(20) "**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.

(21) "**New Wood Product**" means a wood product which has not been previously coated. A wood product from which coatings have been removed to repair flaws in initial coating applications is a new wood product.

(22) "**Pigmented Coating**" means an opaque coating containing binders and colored pigments, and formulated to hide the wood surfaces.

(23) "**Refinished Wood Product**" means a post-consumer wood product which has had some or all of the coatings removed, and to which new coatings are applied in order to preserve or restore the post-consumer wood product to its original condition. A wood product from which coatings have been removed to repair flaws in initial coatings applications is not a refinished wood product.

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

(25) "**Sealer**" means a coating which contains binders and which seals wood surfaces prior to the application of subsequent coatings.

(26) **"Stationary Source"** means the same as defined in Rule 20.1.

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

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

(29) **"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.

(30) **"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.

(31) **"Volatile Organic Compound" (VOC)** means any volatile compound of carbon, which may be emitted to the atmosphere during operations or activities subject to this rule, except methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonates, and exempt compounds.

(32) **"VOC Content Per Volume of Coatings, Less Water and Exempt Compounds"** means the weight of VOC per combined volume of VOC and coating solids and is calculated by the following equation:

$$C_{Cvoc} = (W_s - W_w - W_{es}) / (V_m - V_w - V_{es})$$

where:

C_{Cvoc} = VOC content per volume of coating, less water and exempt compounds

W_s = weight of volatile compounds including water and exempt compounds

W_w = weight of water

W_{es} = weight of exempt compounds

V_m = volume of material including water and exempt compounds

V_w = volume of water

V_{es} = volume of exempt compounds

(33) **"VOC Content Per Volume of Material"** means the weight of VOC per volume of material and is calculated by the following equation:

$$C_{Mvoc} = (W_s - W_w - W_{es}) / V_m$$

where:

$C_{m\text{voc}}$	=	VOC content per volume of material
W_s	=	weight of volatile compounds including water and exempt compounds
W_w	=	weight of water
W_{es}	=	weight of exempt compounds
V_m	=	volume of material including water and exempt compounds

(34) "**Wash Coat**" 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 wash coat 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.

(35) "**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 Equipment

Except as provided in Subsection (b)(2), no coatings shall be applied 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 spray, or
- (vi) High-volume low-pressure (HVLP) spray, 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 used 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 for New Wood Products

(i) Except as provided in Subsection (d)(2)(ii), on and after June 27, 1995, a person shall not apply any coating to a new wood product with a VOC content in excess of the following limits expressed as grams of VOC per liter of coating, as applied, excluding water and exempt compounds:

<u>CATEGORY</u>	<u>VOC LIMIT</u>
Clear Topcoats	680
Fillers	500
High-Solids Stains	700
Inks	500
Medium Density Fiberboard (MDF) Coatings	680
Multi-Colored Coatings	685
Pigmented Coatings	600
Sealers	680
Any Other Coating	420

(ii) On and after June 27, 1995, a person shall not apply the following low-solids coatings to a new wood product with a VOC content in excess of the following limit expressed as grams of VOC per liter of material, as applied:

CATEGORY

Low-Solids Stains, Toners or Wash Coats

VOC LIMIT

700

(iii) Except as provided in Subsection (d)(2)(iv), on and after July 1, 1997, a person shall not apply any coating to a new wood product with a VOC content in excess of the following limits expressed as grams of VOC per liter of coating, as applied, excluding water and exempt compounds:

<u>CATEGORY</u>	<u>VOC LIMIT</u>
Clear Topcoats	275
Conversion Varnishes	550
Fillers	500
High-Solids Stains	550
Inks	500
Medium Density Fiberboard (MDF) Coatings	550
Multi-Colored Coatings	685
Pigmented Coatings	275
Sealers	550
Any Other Coating	275

(iv) On and after July 1, 1997, a person shall not apply the following low-solids coatings to a new wood product with a VOC content in excess of the following limit expressed as grams of VOC per liter of material, as applied:

<u>CATEGORY</u>	<u>VOC LIMIT</u>
Low-Solids Stains, Toners or Wash Coats	480

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) VOC Limits for Refinished Wood Products

(i) Except as provided in Subsection (d)(3)(ii), on and after June 27, 1995, a person shall not apply any coating to a refinished wood product with a VOC content in excess of the following limits expressed as grams of VOC per liter of coating, as applied, excluding water and exempt compounds:

<u>CATEGORY</u>	<u>VOC LIMIT</u>
Clear Topcoats	680
Fillers	500
High-Solids Stains	700
Inks	500
Medium Density Fiberboard (MDF) Coatings	680
Multi-Colored Coatings	685
Pigmented Coatings	600
Sealers	680
Any Other Coating	420

(ii) On and after June 27, 1995, a person shall not apply the following low-solids coatings to a refinished wood product with a VOC content in excess of the following limit expressed as grams of VOC per liter of material, as applied:

<u>CATEGORY</u>	<u>VOC LIMIT</u>
Low-Solids Stains, Toners or Wash Coats	700

The requirements of Subsection (d)(3) may be met using an Alternative Emission Control Plan (AECPP) that has been approved pursuant to Rule 67.1.

(4) Surface Preparation and Stripping Materials

Except as provided in subsection (d)(5), a person shall not use VOC containing materials for surface preparation or 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 material has a total VOC vapor pressure of 20 mm Hg or less, at 20° C (68° F).

(5) Cleaning of 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 by the Air Pollution Control Officer prior to use.

(6) 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.

(7) 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), (d)(4) and/or (d)(5) 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, 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 percent by weight.

(2) A person electing to use control equipment 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 shall be retained on-site for at least three years and shall be made available to the District upon request.

(1) Any person subject to the provisions of Subsections (d)(2), (d)(3), (d)(4) and/or (d)(5) 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) 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, 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.

(ii) Maintain current documentation to demonstrate applicability of any coating category pursuant to Subsection (d)(2) or (d)(3) of this rule.

(iii) Maintain daily or monthly records of the amount of each coating or each coating component for multi-component coatings used.

(iv) Maintain daily or 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) 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 Subsections (d)(2), (d)(3), (d)(4) or (d)(5) 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 daily records of key system operating parameters as approved in the Operation and Maintenance plan. Such records shall be sufficient to docu-

ment continuous compliance with Subsection (e)(1)(iii) during periods of emission producing activities.

(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 a facility operator identifies the specific individual compound(s) and the amount(s) present in the material and provides an EPA and ARB 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 June 27, 1995.

(3) Measurement of the VOC content of coatings, surface preparation and cleaning materials subject to Subsections (d)(2), (d)(3), (d)(4)(i), or (d)(5)(i) of this rule shall be conducted in accordance with EPA Test Method 24 (40 CFR 60, Appendix A) as it exists on June 27, 1995.

(4) Measurement of the VOC content of ultraviolet radiation-cured coatings subject to Subsections (d)(2) and/or (d)(3) of this rule shall be conducted in accordance with ASTM Standard Test Method D5403-93. Measurement of the water content and exempt solvent content, if applicable, shall be conducted and reported in accordance with ASTM Standard Test Methods D 3792-91 and D 4457-85.

(5) Measurement of the initial boiling point of cleaning and surface preparation materials subject to Subsection (d)(4)(ii) and/or (d)(5)(ii) of this rule shall be conducted in accordance with ASTM Standard Test Method D1078-86 for distillation range of volatile organic liquids.

(6) Calculation of total VOC vapor pressure for materials subject to Subsection (d)(4)(iii) and/or (d)(5)(iii) of this rule shall be conducted in accordance with the District's "Procedures for Estimating the Vapor Pressure of VOC Mixtures" as it exists on June 27, 1995. If the vapor pressure of the liquid mixture, as calculated by this procedure, exceeds the limits specified in Subsection (d)(4)(iii) and/or (d)(5)(iii), the vapor pressure shall be determined in accordance with ASTM Standard Test Method D2879-86. The solvent composition shall be determined using one of the following ASTM standard recommended practices: E168-92, E169-93 or E260-91. The fraction of water and exempt compounds in the liquid phase shall be determined by using ASTM Standard Test Methods D3792-91 and D4457-85 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 D2879-86 shall be corrected for partial pressure of water and exempt compounds.

(7) Measurement of solvent losses from alternative application cleaning equipment subject to Subsection (d)(5)(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 June 27, 1995.

(8) Measurement of control device efficiency subject to Subsection (e)(1) of this rule shall be conducted in accordance with EPA Methods 18 and/or 25A (40 CFR 60) as they exist on June 27, 1995 and in accordance with a protocol approved by the Air Pollution Control Officer.

(9) Measurement of the emission collection system capture efficiency subject to Subsection (e)(1) of this rule shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," dated January 9, 1995, using a protocol approved 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.