

RULE 4606 WOOD PRODUCTS AND FLAT WOOD PANELING PRODUCTS COATING OPERATIONS (Adopted December 19, 1991; Amended May 21, 1992; Amended December 17, 1992; Amended June 20, 1996; Amended December 19, 1996; Amended December 17, 1998; Amended December 20, 2001; Amended September 20, 2007; Amended October 16, 2008)

1.0 Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from wood products coating operations, and from the organic solvent cleaning, and the storage and disposal of solvents and waste solvent materials associated with such coating operations. The rule also provides the administrative requirements for recording and measuring emissions.

2.0 Applicability

The provisions of this rule shall apply to the application of coatings to wood products, including furniture, cabinets, flat wood paneling, and custom replica furniture. The rule shall also apply to the organic solvent cleaning, and the storage and disposal of all solvents and waste solvent materials associated with such coating operations.

3.0 Definitions

3.1 Aerosol Product: a hand-held, non-refillable container that expels a pressurized solvent-containing product by means of a propellant-induced force.

3.2 Aerosol-Spray Coating: a coating which is sold in a hand-held, pressurized, non-refillable container of 16 ounces or less and which is expelled from the container in a finely divided spray when a valve on the container is depressed.

3.3 APCO: as defined in Rule 1020 (Definitions).

3.4 Application Equipment: a device, including, but not limited to, a spray gun, brush, and roller, used to apply adhesives, coatings, or inks.

3.5 ARB: California Air Resources Board.

3.6 Binder: non-volatile polymeric organic material (resin) in coatings which binds the pigment and additive particles together to form a surface film in coating applications.

3.7 Class II Hardboard Panel Finishes: finishes which meet the specifications of voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.

- 3.8 CFR: Code of Federal Regulations.
- 3.9 Clear Topcoat: the final coating which contains binders, but not opaque pigments, and is specifically formulated to form a transparent or translucent solid protective film.
- 3.10 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.
- 3.11 Crackle Lacquer: a clear or pigmented topcoat intended to dry to produce a cracked or crazed appearance.
- 3.12 Cured Adhesive, Cured Coating, or Cured Ink: an adhesive, coating, or ink that is dry to the touch.
- 3.13 Custom Replica Furniture: furniture individually produced for a specific client using methods of construction including materials, joinery, and finishes authentic to the period and in keeping with the style of furniture.
- 3.14 Degreaser: a tank, tray, drum or other container in which objects to be cleaned are exposed to a solvent or solvent vapor in order to remove contaminants. The objects to be cleaned include, but are not limited to, parts, products, tools, machinery, and equipment. An enclosed spray application equipment cleaning system is not a degreaser.
- 3.15 Detailing or Touch-up Gun: small air spray equipment that is operated at no greater than five (5) cfm air flow and no greater than 50 psig of air atomizing pressure and is used to repair or touch-up portions of wood products. Detailing and touch-up guns include air brushes.
- 3.16 Dip Coat: to dip an object into a vat of coating material and drain off any excess coating.
- 3.17 Dissolver: an organic solvent that is added to an adhesive, coating, or ink in order to melt or to liquefy solid particles.
- 3.18 Electrostatic Application: method of spray application of coatings where an electrostatic potential is created between the part to be coated and the paint particles.
- 3.19 EPA: United States Environmental Protection Agency.

- 3.20 Exempt Compound: an organic compound not classified as a volatile organic compound (VOC), as listed in the definition of volatile organic compound in Rule 1020 (Definitions).
- 3.21 Exterior Wood Siding: a wood or wood-containing board having a flat surface for use in commercial or residential construction, generally as a covering for an outside wall.
- 3.22 Faux Finish: a finish intended to simulate a surface other than wood, including, but not limited to, stone, sand, slate, marble, metal, metal flake, or leather.
- 3.23 Filler: a material whose primary function is to fill voids.
- 3.24 Flat Wood Paneling Products Coating Operation: the application of coating, inks, or adhesives on flat wood paneling products, which may include the use of spray guns, flash-off areas, spray booths, ovens, conveyors, touch-up areas, and/or other equipment operated for the purpose of applying coatings to flat wood paneling products. Any organic solvent cleaning activity associated with the manufacture of flat wood paneling products considered as part of the coating operation.
- 3.25 Flat Wood Paneling Products: manufactured interior or exterior panels or sidings made of solid wood, plywood, fiberboard, waferboard, particleboard, hardboard, tileboard, or other wood-containing materials to which a protective, decorative, or functional material or layer has been applied. Flatwood paneling products are generally intended for use in construction including, but are not limited to, buildings, homes, trailers, boats, ships, or similar structures.
- 3.26 Flow Coating: a coating application system with no air supplied to the nozzle, and where paint flows over the part and the excess coating drains into a collection system.
- 3.27 Hardboard: a panel manufactured primarily from inter-felted ligno-cellulosic fibers which are consolidated under heat and pressure.
- 3.28 Hardwood Plywood: a plywood whose surface layer is a veneer of hardwood.
- 3.29 Grams of VOC per Liter of Coating, Excluding Water and Exempt Compounds: the weight of VOC per combined volume of VOC and coating solids, and can be calculated by the following equation:

$$\begin{array}{l} \text{Grams of VOC per Liter of} \\ \text{Coating, Excluding} \\ \text{Water and Exempt Compounds} \end{array} = \frac{W_s - W_w - W_{ec}}{V_m - V_w - V_{ec}}$$

Where:

- Ws = weight of volatile compounds, in grams
- Ww = weight of water, in grams
- Wec = weight of exempt compounds, in grams
- Vm = volume of material, in liters
- Vw = volume of water, in liters
- Vec = volume of exempt compounds, in liters

- 3.30 Grams of VOC per liter of Material: the weight of VOC per volume of material, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{ec}}{V_m}$$

Where:

- Ws = weight of volatile compounds, in grams
- Ww = weight of water, in grams
- Wec = weight of exempt compounds, in grams
- Vm = volume of material, in liters

- 3.31 High-Solids Stain: a stain containing more than one (1) pound of solids per gallon of material, and can include wiping stains, glazes, and opaque stains. High-solids stains are formulated to enhance wood grain and change wood color, but not to conceal surface grain.
- 3.32 High-Volume, Low-Pressure (HVLV) Spray Equipment: equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure, measured dynamically at the center of the air cap and the air horns.
- 3.33 Imitation Wood Grain: a hand applied finish that simulates the appearance of a specific natural wood grain.
- 3.34 Ink: a fluid that contains dyes and/or colorants and is used to make markings but not to protect surfaces.
- 3.35 Leaf Finish: a finish used in conjunction with metal leaf or foil.
- 3.36 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.
- 3.37 Low-Solids Stain: a stain containing one (1) pound or less, of solids per gallon of material, and can include semi-transparent stains, toners, and wash coats. Low-solids stains are formulated to enhance wood grain and change wood color, but not to conceal surface grain.

- 3.38 Maintenance Cleaning: the cleaning of tools, forms, molds, jigs, machinery, and equipment (except coating application equipment, ink application equipment, or adhesive application equipment), and the cleaning of work areas where maintenance or manufacturing occurs.
- 3.39 Manufacturing Process: the process of making goods or articles by hand or by machine.
- 3.40 Mold-Seal Coating: the initial coating applied to a new mold or repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.
- 3.41 Multi-Colored Coating: a coating which exhibits more than one (1) color when applied and which is packaged in a single container and applied in a single coat.
- 3.42 Natural Finish Hardwood Plywood Panel: a panel whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.
- 3.43 Normal Business Hours: Monday through Friday, 8:00 am to 5:00 pm.
- 3.44 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.
- 3.45 Non-Atomized Solvent Flow: solvents in the form of a liquid stream without the introduction of pressurized air or any propellant.
- 3.46 Non-Leaking Container: a container without a liquid leak.
- 3.47 Organic Solvent: the same as "Solvent."
- 3.48 Organic Solvent Cleaning: an activity, or operation, or process, (including surface preparation, cleanup, or wipe cleaning), performed outside of a degreaser, that uses organic solvent to remove uncured adhesives, uncured coatings, uncured inks or other contaminants, including, but not limited to, dirt, soil, oil, lubricants, coolants, moisture, fingerprints, and grease, from parts, products, tools, machinery, application equipment and general work areas. Cleaning spray equipment used for the application of coatings, adhesives, or ink, is also considered to be organic solvent cleaning.
- 3.49 Panel: a piece of wood or wood product usually rectangular and used inside homes and mobile homes for wall decorations.

- 3.50 Particleboard: a manufactured board made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure. Thin particleboard has a thickness of one-fourth inch or less.
- 3.51 Pigmented Coating: an opaque coating which contains binders and colored pigments and is formulated to hide the wood surface, either as an undercoat or topcoat.
- 3.52 Printed Interior Panel: a panel whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.
- 3.53 Propellant: any gas, including air, in a pressure container for expelling the contents when the pressure is released.
- 3.54 Repair: recoating portions of previously coated product to cover mechanical damage to the coating following normal painting operations.
- 3.55 Repair Cleaning: a solvent cleaning operation or activity carried out during a repair process.
- 3.56 Repair Process: the process of returning a damaged object or an object not operating properly to good condition.
- 3.57 Roll Coater: a series of mechanical rollers that forms a thin coating film on the surface of the rollers. The coating is applied to a substrate by moving the substrate underneath the rollers.
- 3.58 Sanding Sealer: a coating containing binders, which seals the wood prior to application of the subsequent coatings.
- 3.59 SCAQMD: South Coast Air Quality Management District.
- 3.60 Simulated Wood Material: any material, such as plastic, glass, metal, etc., that is made to give a wood-like appearance or is processed like a wood product.
- 3.62 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).
- 3.63 Solvent Flushing: the use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of equipment by flushing solvent, by a non-atomized solvent flow, through the equipment.

- 3.64 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).
- 3.65 Strippable Booth Coating: a coating that is applied to a booth wall to provide a protective film to receive overspray during finishing operations and that is subsequently peeled off and disposed. Strippable booth coatings are intended to reduce or eliminate the need to use organic solvents to clean booth walls.
- 3.66 Stripper: a liquid used to remove cured coatings, cured inks, and/or cured adhesives.
- 3.67 Surface Preparation: the removal of contaminants from a surface prior to the application of coatings, inks, or adhesives or before proceeding to the next step of a manufacturing process.
- 3.69 Thinner: a solvent that is used to dilute coatings to reduce viscosity, color strength, and solids, or to modify drying conditions.
- 3.69 Tileboard: paneling that has colored waterproof surface coating.
- 3.70 Toner: a wash coat which contains binders and dyes or pigments to add tint to a coated surface.
- 3.71 Touch-up: that portion of the coating operation which is incidental to the main coating process but necessary to cover minor imperfections or to achieve coverage as required.
- 3.72 Viscosity Reducer: an organic solvent which is added to an adhesive, coating or ink to make it more fluid.
- 3.73 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).
- 3.74 Wash Coat: a coating, containing binders, which penetrates into and seals wood, prevents undesired staining, and seals in wood pitch. Wash coats with greater than one (1) pound of solids per gallon of coating shall be considered sanding sealers.
- 3.75 Waste Solvent Material: any solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.
- 3.76 Wipe Cleaning: a solvent cleaning activity performed by hand rubbing an absorbent material such as a rag, paper, sponge, brush, or cotton swab containing solvent.

- 3.77 Wood Products: objects such as cabinets (kitchen, bath and vanity), tables, chairs, beds, sofas, shutters, doors, trim, containers, tools, ladders, art objects, and any other objects made of solid wood and/or wood composition and/or of simulated wood material used in combination with solid wood or wood composition, and flat wood paneling products.
- 3.78 Wood Product Coating Operation: a stationary source that performs a combination of coating application steps which may include the use of spray guns, flash-off areas, spray booths, ovens, conveyors, touch-up areas, and/or other equipment operated for the purpose of applying coatings to wood products.

4.0 Exemptions

- 4.1 The provisions of the rule shall not apply to:
 - 4.1.1 Aerosol-spray coatings for touch up and repair.
 - 4.1.2 Wood products coating operations that use a total of less than 20 gallons of coating per year in all wood products coating operations in a stationary source. Operators are required to keep records specified in Section 6.2 if claiming this exemption.
 - 4.1.3 The application of coatings by template in order to add designs, letters, or numbers to wood products.
 - 4.1.4 The application of coatings to wooden musical instruments.
 - 4.1.5 Residential noncommercial operations.
- 4.2 Architectural Coatings: The provisions of this rule shall not apply to the application of coatings to stationary structures and their appurtenances subject to the provisions of Rule 4601 (Architectural Coatings).
- 4.3 Refinishing, Replacement, and Custom Replica Furniture Operations: The provisions of Sections 5.1, 5.2, 5.3 and 5.4 shall not apply to any refinishing operation necessary for preservation, for returning the wood product to original condition, for replacing missing furniture to complete a matching set, or for producing custom replica furniture, provided records are maintained as specified in Section 6.3.
- 4.4 Specific Finishes: Except for flat wood paneling products subject to the provisions of Section 5.2, the provisions of Sections 5.1, 5.2, 5.3 and 5.4 shall not apply to coatings used to produce the following finishes, provided records are maintained as specified in Section 6.2:

- 4.4.1 Crackle lacquers.
- 4.4.2 Faux finishes.
- 4.4.3 Imitation wood grain.
- 4.4.4 Leaf Finishes.

5.0 Requirements

An operator of wood products coating operation, except for flat wood paneling products coating operation, shall comply with the requirements of Section 5.1 and other applicable provisions of this rule. An operator of flat wood paneling product coating operation shall comply with the requirements of Section 5.3 and other applicable requirements of this rule.

5.1 Wood Products Coating Operation

An operator shall not apply any coating to a wood product, as defined in Section 3.0, which has a VOC content, as applied, that exceeds the applicable limit specified in Tables 1 or 2:

Table 1 VOC Content Limits for Wood Product Coating Operation		
Coating Category	grams of VOC/liter of coating, excluding water and exempt compounds, as applied	pounds of VOC/gallon of coating, excluding water and exempt compounds, as applied
Clear Topcoat	275	2.3
Filler	275	2.3
High-Solids Stain	240	2.0
Ink	500	4.2
Mold-Seal Coating	750	6.3
Multi-Colored Coating	275	2.3
Pigmented Coating	275	2.3
Sanding Sealer	275	2.3

Table 2 VOC Content Limits for Wood Product Coating Operation		
Coating Category	grams of VOC/liter of material, as applied	pounds of VOC/gallon of material, as applied
Low-Solids Stain	120	1.0
Stripper	350	2.9

5.2 In lieu of complying with the requirements in Section 5.1, an operator may operate an APCO-approved VOC emission control system that controls the emissions from the source operation and that meets the requirements of Section 5.4.

5.3 Flat Wood Paneling Products Coating Operation

5.3.1 Effective on and after April 16, 2009, an operator whose total actual VOC emissions from flat wood paneling coating operation at a stationary source that emits at least 15 pounds per day of VOC, before consideration of controls, shall not apply to any flat wood paneling products any coating that exceeds the VOC content limit in Table 3. The 15 pounds per day of VOC emissions, before consideration of controls, includes the amount of VOC emissions from any organic solvent cleaning activity associated with the manufacture of flat wood paneling products. In lieu of complying with the VOC content limits in Table 3 limits, an operator may comply with Section 5.3.1.2.

5.3.1.1 An operator shall comply with the applicable recordkeeping requirements of Sections 6.2, 6.4, and 6.5 to demonstrate if the VOC emissions from flat wood paneling products coating operation exceed 15 pounds per day of VOC.

5.3.1.2 In lieu of complying with the VOC content limits in Table 3, an operator may operate a VOC control system that meets the applicable requirements of Section 5.4.

5.3.2 An operator of flat wood paneling coating operations whose emissions are less than 15 pounds per day of VOC, before consideration of controls, shall comply with the applicable VOC content limits specified in Tables 1 or 2. An operator shall comply with the applicable recordkeeping requirements of Sections 6.2, 6.4, and 6.5 to demonstrate if the VOC emissions from flat wood paneling products coating operation are less than 15 pounds per day of VOC.

Table 3 VOC Content Limits for Flat Wood Paneling Products Coating Operation		
Coatings, Inks, or Adhesives Applied to the Flat Wood Paneling Categories	Comply with at least one of the VOC content limits below.	
	Grams of VOC/liter (pounds of VOC/gallon) of coating, excluding water and exempt compounds, as applied	Grams of VOC /liter (pounds of VOC/gallon) of material, as applied
Printed interior panels made of hardwood plywood, or thin particle board	250 grams/liter (2.1 pounds/gallon)	350 grams /liter (2.9 pounds/gallon)
Natural finish hardwood plywood panels		
Class II finishes on hardboard panels		
Tileboard		
Exterior siding		

5.4 VOC Emission Control System Requirements

In lieu of complying with applicable provisions of Sections 5.1, 5.3, 5.5, or 5.7, an operator may use a VOC emission control system that controls emissions from the source operation and meets the requirements of Sections 5.4.1 through 5.4.6.

- 5.4.1 The VOC emission control system shall comply with the requirements of Section 5.4.2 through Section 5.4.6 during periods of emission-producing activities.
- 5.4.2 The VOC emission control system shall be under District Permit to Operate that is approved by the APCO.
- 5.4.3 For wood products coating operation subject to the requirements of Section 5.1, solvent cleaning operations subject to the requirements of Section 5.7.3, and application equipment requirements of Section 5.5.10, the VOC emission control system shall be operated with an overall capture and control efficiency of at least 85 percent by weight.
- 5.4.4 For flat wood paneling products coating operation subject to the requirements of Section 5.3.1, the VOC emission control system shall be operated with an overall capture and control efficiency of at least 90 percent by weight.

5.4.5 In no case shall compliance through the use of a VOC emission control system result in VOC emissions in excess of the VOC emissions which would result from compliance with applicable provisions of Sections 5.1, 5.3, 5.5, or 5.7.

5.4.6 The minimum required overall capture and control efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by using the following equation:

$$CE = \left[1 - \left(\frac{VOC_{LWc}}{VOC_{LWn,Max}} \times \frac{1 - (VOC_{LWn,Max} / D_{n,Max})}{1 - (VOC_{LWc} / D_c)} \right) \right] \times 100$$

Where:

- CE = Minimum Required Overall Capture and Control Efficiency, percent
- VOC_{LWc} = VOC Limit, less water and less exempt compounds
- VOC_{LWn,Max} = Maximum VOC content of noncompliant coating used in conjunction with a control device, less water and less exempt compounds
- D_{n,Max} = Density of solvent, reducer, or thinner contained in the noncompliant coating, containing the maximum VOC content of the multi-component coating
- D_c = Density of corresponding solvent, reducer, or thinner used in the compliant coating system.

5.5 Application Equipment Requirements

An operator shall not apply coatings to wood products subject to the provisions of this rule unless the coating is applied with properly operating equipment, according to proper operating procedures, and by the use of one of the following methods:

5.5.1 Electrostatic application;

5.5.2 High-Volume, Low-Pressure (HVLP) spray,

5.5.2.1 High-Volume, Low-Pressure (HVLP) spray equipment shall be operated in accordance with the manufacturer's recommendations.

5.5.2.2 For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the

form of manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.5.2.3 A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Section 3.0.

5.5.3 Hand roller;

5.5.4 Flow coat;

5.5.5 Roll coater;

5.5.6 Dip coat;

5.5.7 Paint brush;

5.5.8 Detailing or touch-up guns; or

5.5.9 Such other coating application methods which are demonstrated to the APCO to be capable of achieving at least 65 percent transfer efficiency as determined in accordance with Section 6.6. Prior written approval from the APCO shall be obtained for each alternative method used.

5.5.10 In lieu of complying with the requirements in Sections 5.5.1 through 5.5.9, an operator may control emissions from application equipment with an APCO-approved VOC emission control system that meets the applicable requirements of Section 5.4.

5.6 Work Practice Standards for Flat Wood Paneling Products Coating Operations

An operator shall minimize VOC emissions by complying with the following work practice standards:

5.6.1 Store all coatings, inks, adhesives, thinners, cleaning materials, and waste materials in closed containers. The containers shall remain closed at all times, except when specifically in use.

5.6.2 Close mixing vessels that contain VOC coatings and other materials, except when specifically in use.

5.6.3 Minimize spills of any VOC-containing materials and clean up spills immediately.

5.6.4 Convey any VOC-containing materials in closed containers or pipes.

5.7 Organic Solvent Cleaning Requirements

5.7.1 An operator shall not use organic solvents for cleaning operations that exceed the content limits specified in Table 4 in accordance with the corresponding effective date.

5.7.2 An operator shall not use a strippable booth coating with a VOC content in excess of 450 g/l (3.8 lb/gal) as applied, excluding water and exempt compounds.

Table 4 – VOC Limits for Organic Solvents Used in Cleaning Operations		
Type of Solvent Cleaning Operation	Effective November 15, 2003 through September 20, 2008	Effective on and after September 21, 2008
	VOC Content Limit Grams of VOC/liter of material (lb/gal)	VOC Content Limit Grams of VOC/liter of material (lb/gal)
A. Product Cleaning During Manufacturing Process or Surface Preparation for Coating Application	50 (0.42)	25 (0.21)
B. Repair and Maintenance Cleaning	50 (0.42)	25 (0.21)
C. Cleaning of Coating Application Equipment	550 (4.6)	25 (0.21)

5.7.3 In lieu of complying with the VOC content limits of Table 4, an operator may control emissions from cleaning operations with an APCO-approved VOC emission control system that meets the applicable requirements of Section 5.4.

- 5.7.4 Until September 20, 2008, an operator performing Table 4 Category C cleaning outside of an APCO-approved VOC emission control system and using solvent with VOC content greater than 50 g/L shall meet the requirements of Sections 5.7.5 through 5.7.7 in addition to meeting the VOC content limits of Table 4 Category C. On and after September 21, 2008, an operator shall perform all solvent cleaning operations with cleaning material having VOC content of 25 g/L or less, unless such cleaning operations are carried out within the control of an APCO-approved emission control system that meets the requirements of Section 5.4. Sections 5.7.5 through 5.7.7 shall not apply on and after September 21, 2008.
- 5.7.5 Cleaning activities that use solvents shall be performed by one or more of the following methods:
- 5.7.5.1 Wipe cleaning; or
 - 5.7.5.2 Application of solvent from hand-held spray bottles from which solvents are dispensed without a propellant-induced force; or
 - 5.7.5.3 Non-atomized solvent flow method in which the cleaning solvent is collected in a container or a collection system which is closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container; or
 - 5.7.5.4 Solvent flushing method in which the cleaning solvent is discharged into a container that is closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container. The discharged solvent from the equipment must be collected into containers without atomizing into the open air. The solvent may be flushed through the system by air or hydraulic pressure, or by pumping.
- 5.7.6 Solvent shall not be atomized into the open air unless it is vented to a VOC emission control system that complies with Section 5.3. This provision shall not apply to the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with spray bottles or containers described in Section 5.7.5.2.
- 5.7.7 An owner or operator shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally

effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use.

5.7.8 In lieu of complying with the solvent cleaning provisions of Sections 5.7.4 through 5.7.7, an operator may control emissions from the cleaning operation with a VOC emission control system that meets the requirements of Section 5.4.

5.8 Organic Solvent Disposal and Storage Requirements

An operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc., coatings, adhesives, catalysts, and thinners in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

5.9 Prohibition of Specification

No person shall require for use or specify the application of any coating subject to the provisions of this rule if such use or application would result in a violation of the provisions of this rule. This prohibition shall apply to all written or oral contracts under the terms of which any coating which is subject to the provisions of this rule is to be applied to any wood product at any physical location within the District.

6.0 Administrative Requirements

6.1 The operator shall retain the records specified in Sections 6.1 through 6.4, as applicable, on site for a period of five years, make them available on site during normal business hours to the APCO, ARB, or EPA, and submit them to the APCO, ARB, or EPA upon request.

6.2 Recordkeeping Requirements for Coatings

An operator subject to Sections 5.1, 5.2, 5.3, 5.4, 5.5, or 5.7 and an operator using coatings, inks, or adhesives exempt by Section 4.1.2 or 4.4, shall comply with the following requirements:

6.2.1 Maintain a current list of coatings, inks, adhesives, and solvents in use which provides all of the data necessary to evaluate compliance, including the following information, as applicable:

- 6.2.1.1 identify coatings, catalysts, reducers, inks, adhesives and solvents.
- 6.2.1.2 manufacturer's recommended mix ratio of components.
- 6.2.1.3 VOC content of coatings, as applied.
- 6.2.1.4 VOC content of solvents.
- 6.2.1.5 VOC content of inks, as applied.
- 6.2.1.6 VOC content of adhesives, as applied.
- 6.2.2 Maintain records on a daily basis that provide the following information, as applicable:
 - 6.2.2.1 coating and mix ratio of components in the coating used.
 - 6.2.2.2 quantity of each coating applied.
 - 6.2.2.3 identification of coating category.
 - 6.2.2.4 identification and quantity of each ink used.
 - 6.2.2.5 identification and quantity of each adhesive used.
 - 6.2.2.6 type and amount of solvent used for cleanup and surface preparation.
- 6.2.3 In lieu of maintaining records on a daily basis, stationary sources which are exempt by Section 4.1.2 may maintain such records on an extended basis, not to exceed monthly.
- 6.3 Refinishing, Replacement and Custom Replica Furniture Operations: An operator claiming exemption under Section 4.3 shall comply with the following requirements:
 - 6.3.1 Maintain a current list of coatings in use which provides the following information:
 - 6.3.1.1 coating, catalyst, and reducer.
 - 6.3.1.2 manufacturer's recommended mix ratio of components.

6.3.1.3 VOC content of each component.

6.3.2 Maintain records that provide the following information such that daily usage can be determined:

6.3.2.1 amount of coating, catalyst, and reducer used.

6.3.2.2 type and amount of solvent used for cleanup and surface preparation.

6.3.2.3 type and amount of stripper used.

6.3.2.4 each type of wood product coated. Wood product types are as follows:

6.3.2.4.1 refinishing.

6.3.2.4.2 replacement.

6.3.2.4.3 custom replica furniture.

6.4 Recordkeeping Requirements for Cleaning Solvents

An operator who uses solvents subject to Section 5.7 of this rule shall maintain the following records, and have available at all times, a current list of solvents in use which provides all of the data necessary to evaluate compliance, including the following information as applicable:

6.4.1 Keep a copy of the manufacturer's product data sheet or material safety data sheet of the solvents used for organic solvent cleaning activities.

6.4.2 Maintain a current list of solvents that are being used for organic solvent cleaning activities. The list shall include the following information:

6.4.2.1 The name of the solvent and its manufacturer's name.

6.4.2.2 The VOC content of the solvent expressed in grams/liter or lb/gallon.

6.4.2.3 When the solvent is a mixture of different materials that are blended by the operator, the mix ratio of the batch shall be recorded and the VOC content of the batch shall be calculated and recorded in order to determine compliance with the specified limits of VOC content, as applied.

6.4.2.4 The type of cleaning activity for each solvent that is being used in accordance with the applicable cleaning category specified in Table 4 of this rule.

6.5 VOC Emission Control Systems Records

An operator using a VOC emission control system pursuant to Section 5.4 as a means of complying with this rule shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. Key system operating parameters are those necessary to ensure compliance with VOC limits. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

6.6 Labeling Requirements

6.6.1 VOC Content: Each container or accompanying data sheet of any coating subject to this rule shall display the maximum VOC content of the coating, as applied after any thinning as recommended by the manufacturer. VOC content shall be displayed as grams of VOC per liter (or pounds of VOC per gallon) of coating, less water and exempt compounds. VOC content displayed may be calculated using product formulation data, or may be determined using the test method in Section 6.8.

6.6.2 Thinning Recommendations: Each container or accompanying data sheet of any coating subject to this rule shall display the manufacturer's recommendation regarding thinning of the coating. This requirement shall not apply to the thinning of coatings with water.

6.7 Compliance Statement Requirements

Manufacturers of any solvents subject to this rule shall indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, the VOC content, and density, as supplied. The VOC content shall be expressed in units of gm/liter or lb/gallon.

6.8 Test Methods

The following test methods shall be used to determine compliance with the provisions of this rule. Alternative test methods may be used provided they are approved by the APCO, ARB, and EPA.

- 6.8.1 Analysis of Samples: Samples of VOC as specified in this rule shall be analyzed by EPA Method 24 and exempt halogenated compounds shall be analyzed by ARB Method 432.
- 6.8.2 Determination of Emissions: Emissions of VOC shall be measured by EPA Method 25, 25A, or 25B, and exempt halogenated compounds shall be analyzed by ARB Method 422.
- 6.8.3 Determination of emissions of VOC from spray gun cleaning systems shall be made using SCAQMD "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," October 3, 1989.
- 6.8.4 The transfer efficiency of alternative coating application methods shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User," May 24, 1989.
- 6.8.5 Determination of Overall Capture and Control Efficiency of VOC Emission Control System
- 6.8.5.1 The capture efficiency of a VOC emission control system's collection device(s) shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable.
- 6.8.5.1.1 Capture Efficiency, percent, is the ratio of the weight of VOC in the effluent stream entering the control device to the weight of VOC emitted from wood product coating operation or flat wood paneling product coating operation, both measured simultaneously, shall be calculated by the following equation:
- $$\text{Capture Efficiency (\%)} = (W_c \div W_e) \times 100$$
- Where: W_c = weight of VOC entering the control device
 W_e = weight of VOC emitted
- 6.8.5.2 The control efficiency of a VOC emission control system's control device(s) shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.8.5.2.1 Control Device Efficiency, in percent, is the ratio of the weight of VOC removed by the control device from the effluent stream entering the control device to the weight of VOC in the effluent stream entering the control device, both measured simultaneously, shall be calculated by the following equation:

$$\text{Control Device Efficiency (\%)} = [(W_c - W_a) \div W_c] \times 100$$

Where: W_c = weight of VOC entering the control device
 W_a = weight of VOC discharged from the control device

6.8.5.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{\text{CAPTURE AND CONTROL}} = [CE_{\text{CAPTURE}} \times CE_{\text{CONTROL}}] / 100 \%$$

Where:

$CE_{\text{CAPTURE AND CONTROL}}$ = Overall Capture and Control Efficiency, in percent

CE_{CAPTURE} = Capture Efficiency of the collection device, in percent, as determined in Section 6.8.5.1.

CE_{CONTROL} = Control Efficiency of the control device, in percent, as determined in Section 6.8.5.2

6.9 Multiple Test Methods

When more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

7.0 Compliance Schedule

7.1 The operator who becomes subject to the requirements of this rule through loss of exemption status allowed by Section 4.0 shall comply with all the applicable provisions of this rule effective on the date the exemption status is lost.

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