Rule 3.20 **WOOD PRODUCTS COATING OPERATIONS** (Adopted 12/05/2005)

A. **GENERAL**

A.1. **PURPOSE:** To establish limits on the emission of volatile organic compounds (VOC) from coatings and strippers used on wood products and from products used in surface preparation and cleanup.

A.2. **APPLICABILITY:** This rule applies to any person who uses, manufactures, blends, sells, repackages, distributes, or specifies the use of wood products coatings, and/or strippers for use within the District.

A.3. **SEVERABILITY:** If a court of competent jurisdiction issues an order that any provision of this Rule is invalid, it is the intent of the District that other provisions of this Rule remain in full force and effect, to the extent allowed by law.

B. **EXEMPTIONS**

The provisions of this Rule shall not apply to the following:

B.1. This rule does not apply to sources using less than 55 gallons per year (singly or in any combination) of wood products coatings and/or strippers.

B.2. Wood products coatings that are sold in non-refillable aerosol-spray containers.

B.3. Coating operations for the purpose of manufacturing a finished wood panel intended for attachment to the inside walls of buildings including, but not limited to, homes and office buildings, mobile homes, trailers, prefabricated buildings and similar structures; or a finished exterior wood siding intended for use in construction.

B.4. Coating of architectural components or structures not coated in a shop environment. Coating of architectural components or structures is subject to the provisions of Rule 3.15 Architectural Coatings.

B.5. Stencil coatings when used to comply with U.S. Military Specifications.

C. **Definitions:**

C.1. **Aerosol-Spray Container**: Any hand-held, pressurized, non-refillable container of 1 liter (1.1 quarts) or less where the contents are released when a valve on the container is depressed.

C.2. **Affected Pollutant**: Volatile organic compounds (VOC) as defined in Rule 10.1.

C.3. **Binders**: Non-volatile polymeric organic materials (resins) that form the surface film in coating applications.

C.4. **Capture Efficiency**: Expressed in percent, capture efficiency is the ratio of the weight of the VOC in the effluent stream entering a control device to the weight of the VOC emitted from wood product coating operations, both measured simultaneously, and can be calculated by the following equation:

$$\textbf{Capture Efficiency} = \frac{Wc}{We} X\ 100$$

Where: Wc = Weight of VOC entering the control device
We = Weight of VOC emitted

C.5. **Cleanup Material**: A VOC-containing material used to clean application equipment used in wood products coating operations.

C.6. **Clear Topcoat**: A final coating that contains binders, but not opaque pigments, and is specially formulated to form a transparent or translucent solid protective film.

C.7. **Closed Container**: A container that has a cover where the cover meets with the main body of the container without any gaps between the cover and the main body of the container.

C.8. **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.

C.9. **Control Efficiency**: Expressed in percent, control efficiency is the ratio of the weight of the 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. Control efficiency is calculated by the following equation:

$$\textbf{Control Efficiency} = \frac{(Wc-Wa)}{Wc} X\ 100$$

Where: Wc = Weight of VOC entering the control device
Wa = Weight of VOC discharged from the control device

C.10. **Conversion Varnish**: A coating comprised of a homogeneous (alkyd-amino resin) liquid which, when acid catalyzed and applied, hardens upon exposure to air or heat by

evaporation and polymerization to form a continuous film that imparts protective or decorative properties to wood surfaces. When used as a self-sealing system, conversion varnish shall not be subject to the VOC limit for sealers as specified in Section D.2 of this rule. For self-sealing systems, conversion varnish shall be subject to a VOC limit of 550 grams per liter (1.39 lb-VOC/lb-solids).

C.11. **Dip Coat**: A coating which is applied by dipping an object into a vat of coating material and allowing any excess coating material to drain off.

C.12. **Electrostatic Application**: The electrical charging of atomized coating droplets for deposition by electrostatic attraction.

C.13. **Emissions Unit**: An identifiable operation or piece of process equipment such as an article, machine, or other contrivance of which controls, emits, may emit, or results in the emissions of any affected pollutant directly or as fugitive emissions.

C.14. **Enclosed Gun Cleaner**:

C.14.a. A device that is used for the cleaning of spray guns, pots, and hoses that has an enclosed solvent container, is not open to the ambient air when in use, and has a mechanism to force the cleanup material through the gun while the cleaner is in operation; or

C.14.b. A device that is used for the cleaning of spray guns, pots, and hoses that has an enclosed solvent container, uses non-atomized solvent flow to flush the spray equipment, and collects and returns the discharged solvent to the enclosed container.

C.15. **Exempt Compound**: A chemical identified in the following list. Exempt compounds content of a coating shall be determined by South Coast Air Quality Management District Method 303-91 (Revised August 1996), incorporated by reference in Section F.3.c of this Rule.

carbon monoxide
carbon dioxide
carbonic acid
metallic carbides or carbonates
ammonium carbonate
methane
ethane
methylene chloride (dichloromethane)
1,1,1-trichloroethane (methyl chloroform)
1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113)
trichlorofluoromethane (CFC-11)
dichlorodifluoromethane (CFC-12)
chlorodifluoromethane (HCFC-22)

trifluoromethane (HFC-23)
1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114)
chloropentafluoroethane (CFC-115)
1,1,1-trifluoro-2,2-dichloroethane (HCFC-123)
1,1,1,2-tetra-fluoroethane (HFC-134a)
1,1-dichloro-1-fluoroethane (HCFC-141b)
1-chloro-1,1-difluoroethane (HCFC-142b)
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)
pentafluoroethane (HFC-125)
1,1,2,2-tetrafluoroethane (HFC-134)
1,1,1-trifluoroethane (HFC-143a)
1,1-difluoroethane (HFC-152a)
parachlorobenzotrifluoride (PCBTF)
cyclic, branched, or linear, completely methylated siloxanes
acetone
perchloroethylene (tetrachloroethylene)
3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)
1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)
1,1,1,2,3,4,4,5,5,5-decafluoropropane (HFC 43-10mee)
difluoromethane (HFC-32)
ethylfluoride (HFC-161)
1,1,1,3,3,3-hexafluoropropane (HFC-236fa)
1,1,2,2,3-pentafluoropropane (HFC-245ca)
1,1,2,3,3-pentafluoropropane (HFC-245ea)
1,1,1,2,3-pentafluoropropane (HFC-245eb)
1,1,1,3,3-pentafluoropropane (HFC-245fa)
1,1,1,2,3,3-hexafluoropropane (HFC-236ea)
1,1,1,3,3-pentafluorobutane (HFC-365mfc)
chlorofluoromethane (HCFC-31)
1 chloro-1fluoroethane (HCFC-151a)
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)
1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C4F9OCH3)
2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF3)2CFCF2OCH3))
1-ethoxy-1,1,2,2,3,3,4,4,4-nonaflurobutane (C4F9OC2H5)
2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF3)2CFCF2OC2H5)
methyl acetate
perfluorocarbon compounds which fall into these classes:
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;
Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.
Tertiary butyl acetate (tbac)

C.16. **Filler**: A preparation used to fill in cracks, grains, etc. of wood before applying a coating.

C.17. **Flow Coat**: A coating of which is applied by flowing a stream of coating over an object and allowing any excess coating material to drain off.

C.18. **High-Solid Stain**: Stains containing more than 454 grams (1 pound) of solids per 3.785 liters (1 gallon), by weight and can include wiping stains, glazes, and opaque stains

C.19. **High-Volume, Low-Pressure (HVLP)**: Equipment used to apply coatings by means of a gun which is designed to be operated and which is operated between 0.1 and 10 pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns.

C.20. **Ink**: A fluid that contains dyes and/or colorants and is used to make markings but not to protect surfaces.

C.21. **Low-Solids Stains**: Stains that contain 454 grams (1 pound) or less of solids per 3.785 liters (1 gallon) or less by weight.

C.22. **Low-Volume, Low-Pressure (LVLP) Equipment**: Spray coating application equipment with air pressure between 0.1 and 10.0 psig and air volume less than 15.5 cubic feet per minute (cfm) per spray gun and which operates at a maximum fluid delivery pressure of 50 psig.

C.23. **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.

C.24. **Multi-Colored Coating**: A coating which exhibits more than one color when applied and which is packaged in a single container and applied in a single coat.

C.25. **New Wood Product**: A wood product which has not been previously coated. A wood product from which uncured coatings have been removed to repair flaws in initial coatings applications is a new wood product.

C.26. **Pigmented Coatings**: Opaque coatings that contain binders and colored pigments that are formulated to hide the wood surface either as an undercoat or topcoat.

C.27. **Reactive Diluents**: A liquid component of a coating that is a VOC during application, and one in which through chemical or physical reactions, such as polymerization, becomes an integral part of a finished coating.

C.28. **Refinishing Operation**: The steps necessary to remove cured coatings and to repair, preserve, or restore a wood product.

C.29. **Repair Coating**: A coating used to recoat portions of a product which has sustained mechanical damage to the coating following normal coating operations.

C.30. **Roll Coater**: A series of mechanical rollers that form a thin coating film on the surface of the roller which is applied to a substrate by moving the substrate underneath the roller.

C.31. **Sealer**: A coating containing binders which seals the wood prior to application of subsequent coatings.

C.32. **Stencil Coating**: An ink or a pigmented coating which is rolled or brushed onto a template or stamp in order to add identifying letters and/or numbers to wood products.

C.33. **Stripper**: A liquid used to remove cured coatings, cured inks, and/or cured adhesives.

C.34. **Surface Preparation Material**: A VOC-containing material applied to the surface of any wood product, prior to the application of coatings, to clean the wood product or to promote the adhesion of subsequent coatings.

C.35. **Toner**: A wash coat which contains binders and dyes or pigments to add tint to a coated surface.

C.36. **Touch-up Coating**: A coating used to cover minor coating imperfections appearing after the main coating operation.

C.37. **Volatile Organic Compound (VOC)**: Any compound of carbon (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, methyl acetate, and methane) that has a vapor pressure greater than 0.1 mm of Hg at standard conditions.

C.38. **Volatile Organic Compound Composite Partial Vapor Pressure**: The sum of the partial pressures of compounds defined as VOC.

C.39. **Wash Coat**: A coating that is used to seal wood surfaces, preventing undesired staining, and control penetration. For the purpose of this rule, wash coats shall be considered low-solids coatings and shall contain less than 454 grams (1 pound) of solids per 3.785 liters (1 gallon) by weight. Wash coats with greater than 454 grams (1 pound) of solids per 3.785 liters (1 gallon), by weight, shall be considered sealers.

C.40. **Wood Panel**: Any piece of wood or wood composition which is solid or laminated, and which is larger than 10 square feet in size, and which is not subsequently cut into smaller pieces.

C.41. **Wood Products**: Surface-coated products which include cabinets (kitchen, bath, and vanity), tables, chairs, beds, sofas, shutters, art objects, and any other coated objects made of solid wood and/or wood composition.

C.42. **Wood Product Coating Application Operations**: A combination of coating application steps of which may include use of spray guns, flash-off areas, spray booths, ovens, conveyors, and/or other equipment operated for the purpose of applying coating materials.

D. **REQUIREMENTS**

D.1. Application Equipment Requirements: A person subject to the provisions of this rule shall not apply any wood products coating to any wood products, unless one of the following application methods is used:

D.1.a. Electrostatic application equipment
D.1.b. High Volume Low Pressure spray equipment
D.1.c. Dip coat
D.1.d. Flow coat
D.1.e. Hand application methods, such as brush or roller
D.1.f. Roll coater
D.1.g. Low-Volume, Low-Pressure spray equipment
D.1.h. Air assisted airless, for touch-up and repair only
D.1.i. Any other equivalent method, which has been approved in writing by the Air Pollution Control Officer (APCO) and the U.S. Environmental Protection Agency (EPA).

D.2. **VOC Content of Coatings for New Wood Products**: Except as provided in Sections D.4, D.5, and D.6 of this rule, no person shall apply any coating to a new wood product which has a volatile organic compound (VOC) content exceeding the applicable limits specified below. The VOC content of coatings, except low-solid stains, toners, and wash coats, shall be determined in accordance with Sections E.3., and F.3.a of this rule. The VOC content of low-solid stains, toners, and wash coats shall be determined in accordance with Sections E.4, and F.3.a of this rule.

D.2.a. If emission averaging is not used to achieve compliance with this section, VOC limits expressed in grams per liter shall be used.
D.2.b. If emission averaging is used to achieve compliance with this section, VOC limits expressed in pounds of VOC per pound of solids shall be used.

Coating	VOC limits Grams per liter of coating (lb-VOC/lb-solids) Less water and exempt compounds

	On and After Date of Adoption	On and After 12/1/2006
Clear Topcoats	550 (1.37)	275 (0.35)
Conversion	550 (1.37)	550 (1.20)
Filler	500 (0.66)	275 (0.18)
High-Solid Stain	550 (1.23)	350 (0.42)
Inks	500 (0.96)	500 (0.96)
Mold-Seal Coating	750 (4.20)	750 (4.20)
Multi-Colored Coating	685 (2.60)	275 (0.33)
Pigmented Coating	550 (1.10)	275 (0.25)
Sealer	550 (1.39)	275 (0.36)
Low-Solid Stains, Toners, Wash coats	480 (4.00)	120 (1.00)

D.2.c. Notwithstanding the VOC limits specified in this section, a person may apply a sealer with a VOC content not exceeding 680 grams/liter, provided that the topcoat used on the same wood product does not exceed 275 grams/liter.

D.3. VOC Content of Coatings for Refinishing, Repairing, Preserving, or Restoring Wood Products: Except as provided in Sections D.4, D.5, and D.6 of this rule, no person shall apply any coating to refinish, repair, preserve, or restore a wood product which has volatile organic compound (VOC) content exceeding the applicable limits specified below. The VOC content of coatings, except low-solid stains, toner, and wash coats, shall be determined in accordance with Sections G.3 and F.3.a of this rule. The VOC content of low-solid stains, toners, and wash coats shall be determined in accordance with Sections G.4 and F.3.a. of this rule.

D.3.a. If emission averaging is not used to achieve compliance with this section, VOC limits expressed in grams per liter shall be used.

D.3.b. If emission averaging is used to achieve compliance with this section, VOC expressed in pounds of VOC per pound of solids shall be used.

Coating	VOC limits Grams per liter of coating (lb-VOC/lb-solids) Less water and exempt compounds On and After Date of Adoption
Clear Topcoats	680 (2.50)
Conversion	550 (1.20)
Filler	500 (0.96)
High-Solid Stain	700 (2.57)
Inks	500 (0.96)
Mold-Seal Coating	750 (4.20)
Multi-Colored Coating	680 (2.60)
Pigmented Coating	600 (1.60)
Sealer	680 (2.50)
Low-Solid Stains, Toners, Wash coats	480 (0.76)

D.4. VOC Content For Strippers: On and after the date of adoption of this rule, a person shall not use a stripper on wood products unless:

D.4.a. It contains less than 350 grams of VOC per liter of material; or

D.4.b. The VOC composite partial vapor pressure is 2 mm Hg (0.04 psig) or less at 20°C (68°F), as calculated pursuant to Section E.2 of this rule.

D.5. Emission Control Equipment:

D.5.a. As an alternative, a person may comply with the VOC limits specified in Sections D.2, D.3, and D.4. of this rule by using an approved air pollution control system consisting of capture and control devices which reduces VOC emissions from the application of wood products coatings or strippers by an equivalent or greater amount than the limits specified in Sections D.2, D.3, and D.4 of this rule, with written approval of the Air Pollution Control Officer (APCO). The minimum required overall capture and control efficiency of an emission system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by the following equation:

$$C.E. = 1 - \frac{VOC_{LWc}}{VOC_{LWnMax}} X \frac{1 - \frac{VOC_{WnMax}}{D_{nMax}}}{1 - \frac{VOC_{LWc}}{D_c}} X\ 100$$

Where: C.E.= Overall Control Efficiency, percent.

VOC_{LWc} = VOC Limit of Rule 3.20 less water and less exempt compounds, pursuant to

Sections D.2, D.3, and/or D.4

$VOC_{LWn,Max}$ = Maximum VOC content of non-compliant 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 non-compliant 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 = 880 g/L

D.5.b. The capture system shall vent all drying oven exhaust to the control device and shall have one or more inlets for collection of fugitive emissions; and

D.5.c. During any period of operation of a thermal incinerator, combustion temperature shall be continuously monitored; and

D.5.d. During any period of operation of a catalytic incinerator, exhaust gas temperature shall be continuously monitored; and

D.5.e. Written approval for the use of such equipment is obtained from the Air Pollution Control Officer (APCO) prior to installation or use of the equipment.

D.6. Emissions Averaging Provisions: A person may comply with the provisions of Sections D.2, D.3, and D.4 of this rule by using an averaging approach for all or a portion of the coatings used at the facility, provided that all the requirements of this section are met.

D.6.a. A person using the provisions of this Section for compliance shall demonstrate that the emissions from the coatings being averaged, on a pounds of VOC per pounds of solids basis on a rolling 30-day basis are less than or equal to 90 percent of the allowable emissions, based on the following:

$$0.9 \sum_{i=1}^{n} VOC_i(U_i) \geq \sum_{i=1}^{n} ER_i(U_i)$$

Where: VOC_i = VOC content limit of coating "i" (grams of VOC per liter of material for low solids coatings and pounds of VOC per pound of solids for all other coatings, as required in Sections D.2, D.3, or D.4 of this rule.)

U_i = Usage of coating "i" (liters of material for low solids coatings, and

pounds of solids for all other coatings), and

ER_i = Actual VOC content of coating "i", as applied (grams per liter for low solids materials and pounds of VOC per pounds of solids for all other coatings).

D.6.b. The 0.9 multiplier above is not applicable after 10/1/2006, or to facilities that are subject to Rule 10.3 Federal Operating Permits. Any wood product coating not included in emissions averaging shall comply with the VOC limits in Sections D.2, D.3, or D.4 of this rule.

D.7. Emissions Averaging Plan:

D.7.a. A person wanting to use emissions averaging to achieve compliance with this rule shall submit an Emissions Averaging Plan ("EA Plan") for approval by the Air Pollution Control Officer. The EA Plan may not be implemented until approved in writing, by the Air Pollution Control Officer. Submittal of an EA Plan does not provide an exemption from the requirements of this rule. The EA Plan must be resubmitted for approval by the Air Pollution control Officer on an annual basis. If the EA Plan is not approved, emissions averaging will not be permitted.

D.7.b. The EA Plan shall include, at a minimum:

D.7.b.1. A description of the wood product coatings to be included in the averaging program, and

D.7.b.2. A description of the quantification and recordkeeping for coating usage, coating VOC and solids content, VOC emissions, and calculations to show compliance with Section D.6 of this rule.

D.8. Requirements for Surface Preparation and Cleanup Materials: Any person subject to this rule shall comply with the following requirements.

D.8.a. Spray gun nozzles only may be soaked in solvent-based materials for cleaning provided the container (not to exceed five (5) gallons in size) is kept tightly covered at all times except when accessing the container.

D.8.b. Effective date of adoption, closed containers shall be used for the disposal of cloth or paper used for surface preparation, cleanup, and coating removal.

D.8.c. Effective date of adoption, VOC-containing materials shall be stored in containers which are closed when not in use and shall be disposed of

in a manner that the VOC are not emitted into the atmosphere.

D.8.d. Effective date of adoption, a person shall not use solvent-based VOC-containing materials for the cleanup of spray equipment used in wood products coating application operations unless the spray equipment is disassembled and cleaned in an enclosed gun cleaner.

D.8.e. Effective date of adoption, a person shall not perform surface preparation of cleanup with a material containing VOC in excess of 200 grams per liter (1.67 pounds per gallon).

E. **Administrative Requirements**

E.1. Labeling Requirements: VOC content: Each container of any coating, surface preparation material, or cleanup material, or stripper manufactured after date of adoption shall display its maximum VOC content of the coating, as applied, and after any thinning as recommended by the manufacturer, or shall have this information provided in a product data sheet supplied with the container. VOC content shall be displayed as grams of VOC per liter of coating (less water and less exempt solvent, and excluding any colorant added to tint bases), surface preparation and cleanup material, or stripper. VOC content displayed may be calculated using product formulation data, or may be determined using the test method in Section F.3.a of this rule. Alternatively, containers for strippers subject to the provisions of Section D.4 of this rule may display only the partial vapor pressure.

E.2. Calculation for Determining Volatile Organic Compound Composite Partial Vapor Pressure. VOC composite partial vapor pressure for determination of compliance with Section D.4. of this rule shall be calculated by the following equation:

$$PP_c = \frac{\sum_{i=1}^{n} (W_i)(VP_i)/MW_i}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

Where: PP_c = VOC composite partial presser at 20°C, in mmHg.

W_i = Weight of the "i"$_{th}$ VOC compound, in

grams.

W_w = Weight of water, in grams.

W_e = Weight of exempt compounds, in grams.

MW_i = Molecular weight of the "i"$_{th}$ VOC compound, in (g/gmole).

MW_w = Molecular weight of water, in (g/gmole).

MW_e = Molecular weight of exempt compound, in (g/gmole).

VP_i = Vapor Pressure of the "i"$_{th}$ VOC compound at 20°C, in mmHg.

E.3. Calculation For Determining Weight of VOC Per Volume of Coating, Less Water and Less Exempt Compounds: The weight of VOC per combined volume of VOC and coating solids, shall be calculated by the following equation:

$$G1 = \frac{Wv - Ww - Wec}{Vm - Vw - Vec}$$

Where: W_v = Weight of Volatile Compounds, in grams.

W_w = Weight of water, in grams

W_{ec} = Weight of exempt compounds, in grams.

V_m = Volume of coating material, in liters.

V_w = Volume of water, in liters.

V_{ec} = Volume of exempt compounds, in liters.

E.4. Calculation for Determination of VOC Content per Volume of Material: The volume of material is defined as the volume of the original material, plus any VOC-containing material added to the original material. The original material is the material before any VOC-containing material such as the solvent is added for purposes of mixing or thinning. The VOC content shall exclude any colorant added to a tint base. The weight of VOC per total volume of material shall be calculated by the following equation:

$$\text{VOC Content per Volume of Material} = \frac{(Wv - Ww - Wec)}{Vm}$$

Where: W_v = Weight of all Volatile Compounds.

W_w = Weight of water.

W_{ec} = Weight of compounds listed as exempt from the definition of VOC as provided for in the definition of Exempt Compounds in this Rule.

V_m = Volume of material.

E.5. Calculation for Determination of Pounds of VOC per Pound of Solids:

E.5.a. Pounds of VOC per pound of solids is the weight of VOC per weight of coating solids within any given volume of coating, and can be calculated by

the test method found in Section D.3.b. and the following equation:

$$\text{Pounds of VOC per Pound of Solids} = \frac{(Ws - Ww - Wec)}{Wr}$$

Where: W_s = Weight of all Volatile Compounds, in pounds.
W_w = Weight of water, in pounds.
W_{ec} = Weight exempt compounds, in pounds.
W_r = Weight of coating solids, in pounds.

E.5.b. For coatings that contain reactive diluents, the VOC content of the coating is determined after curing. The pounds of VOC per pound of coating solids shall be calculated by the test method found in Section F.3.g and the following equation:

$$\text{Pounds of VOC per Pound of Solids} = \frac{(Ws - Ww - Wec)}{Wr}$$

Where: W_s = Weight of Volatile Compounds, in pounds emitted into the atmosphere during curing.
W_w = Weight of water, in pounds emitted into the atmosphere during curing.
W_{ec} = Weight exempt compounds, in pounds emitted into the atmosphere during curing.
W_r = Weight of coating solids, in pounds prior to reaction.

E.6. Operation and Maintenance Plan ("O&M Plan"): Any person using an approved emission control device pursuant to Section D.5 as a means of complying with this rule must submit with the application for Authority to Construct pursuant to Rule 4.1 Permits Required, an O&M Plan for the emission control device to the Air Pollution Control Officer for approval. O&M Plans for emission control devices installed prior to the adoption of this rule, if not previously submitted, must be submitted within 60 days of the date of Adoption of this Rule. Each O&M Plan shall specify operation and maintenance that will demonstrate continuous operation of the emission control device during periods of emissions-producing operations. Each O&M Plan shall also specify which records must be kept to document these operations and maintenance procedures. These records shall comply with the requirements of Section D.1 of this

rule. An O&M Plan shall be implemented upon approval of the Air Pollution Control Officer.

E.7. Feasibility and Technology Assessment: By 10/1/2006, the Air Pollution Control Officer shall assess the feasibility of the final VOC limits and whether new technology could provide additional emissions reductions to meet the District's Air Quality Management Plan objectives.

F. **Monitoring and Records:**

F.1. Usage Records: In addition to any applicable record keeping requirements of either Rule 10.1 New Source Review, and Rule 10.3 Federal Operating Permits, or any other District rule which may be applicable, persons subject to this rule shall maintain the following:

F.1.a. A data sheet, material list, or invoice giving material name, manufacturer identification, material application, and VOC content; and

F.1.b. Any catalysts, reducers, or other components used and the mix ratio; and the applicable VOC limit from Section D.2.or D.3. and the actual VOC content of the wood product coating as applied.

F.1.c. For persons using coatings or materials that comply with the VOC limits specified in Sections D.2, D.3, and D.4 of this rule, records shall be maintained on a monthly basis showing the type and volume of coatings, strippers, and surface preparation and cleanup materials used. Coating type shall be designated according to the coating categories as listed in Sections D.2, D.3, and D.4.

F.1.d. For coatings used in emissions averaging pursuant to Section D.6 of this rule, daily records shall be maintained showing the type and volume of coatings, strippers, and surface preparation and cleanup materials used.

F.1.e. If at any time a person uses coatings or materials exceeding the VOC limits specified in Sections D.2, D.3, and D.4 of this rule, records shall be maintained on a daily basis showing the type and volume of materials used.

F.1.f. For persons using a collection and control system pursuant to Section D.5 of this rule, records shall be maintained on a daily basis showing the type and volume of coatings and solvents used.

F.1.g. Any person using an emission control system pursuant to the provisions of Section D.5 as a means of compliance with this rule shall maintain daily records of key system operating and maintenance procedures which will demonstrate continuous operation and compliance of the emission control device during periods of emission-producing activities. Key system operating parameters are those necessary to ensure compliance with the requirements of Section D.5 of this rule.

F.2. Duration of Records: All records required by this rule shall be maintained for at least three (3) years, and shall be made available to the Air Pollution Control Officer upon request.

F.3. Test Methods:

F.3.a. Determination of VOC Content: VOC content of wood products coatings, strippers, and surface preparation and cleanup materials subject to this rule shall be determined in accordance with EPA Method 24 and Section E.3 or E.4 of this rule, as applicable.

F.3.b. Determination of Composition of VOC: The composition of VOC shall be as specified on the manufacturer's label or data sheet, or as determined by ASTM Method E-260, General Gas Chromatograph.

F.3.c. Determination of Compounds Exempt from VOC Definition: Compounds exempted from VOC definition, as listed in Section C. of this rule, shall be determined in accordance with South Coast Air Quality Management District Method 303. If any of the perfluorocarbons or volatile cyclic and linear methyl siloxanes are being claimed as exempt compounds, the person making the claim must state in advance which compounds are present, and the EPA approved test method used to make the determination of these compounds.

F.3.d. Determination of Capture Efficiency: Efficiency of the collection system shall be determined in accordance with EPA "Guidelines for Determining Capture Efficiency, January 9, 1995". Individual collection efficiency test runs subject to the U.S. EPA technical guidelines shall be determined by:

F.3.d.1. Applicable U.S. EPA Methods 204, 204A, 204B, 204C, 204E, and/or, 204F.

F.3.d.2. The South Coast Air Quality Management District “Protocol for Determination of Volatile Organic Compound (VOC) Capture Efficiency”; or

F.3.d.3. Any other method approved by the U.S. EPA, the California Air Resources Board, and the Air Pollution Control Officer.

F.3.e. Determination of Control Efficiency: Efficiency of control equipment shall be determined in accordance with EPA Method 18, 25, 25A, EPA Method 2 or 2C (whichever is applicable).

F.3.f. Vapor Pressure: Vapor pressures may be obtained from standard reference texts or may be determined by ASTM D-2879.

F.3.g. Volatile Content of Radiation Curable Materials: Volatile content of radiation curable materials shall be obtained in accordance with ASTM Method D-5403-93.