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(Proposed Amended Rule)

071012

**PROPOSED AMENDED RULE 1107. COATING OF METAL PARTS AND PRODUCTS**

(a) Purpose and Applicability

The purpose of Rule 1107 is to reduce volatile organic compound (VOC) emissions from the coating of metal parts and products. This rule is applicable ~~applies to all any person who performs metal coatings or metal stripping operations in the District, and any person who supplies, sells, offers for sale or specifies any metal coating or stripper in the District, except those performed~~ excluding those used for on-aerospace assembly, magnet wire, marine craft, motor vehicle, metal container, and coil coating operations. This rule does not apply to the coating of architectural components coated at the structure site or at a temporary unimproved location designated exclusively for the coating of ~~structural~~-architectural components.

(b) Definitions

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

- (1) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic/marketing applications.
- (2) AIR-DRIED COATING is a coating that is cured at a temperature below 90°C (194°F).
- (3) ALTERNATIVE EMISSION CONTROL PLAN is a plan that allows a source to demonstrate an alternative method of rule compliance, pursuant to Rule 108 - Alternative Emission Control Plans.
- (4) BAKED COATING is a coating that is cured at a temperature at or above 90°C (194°F).

- (5) CAMOUFLAGE COATING is a coating used, principally by the military, to conceal equipment from detection.
- (6) CAPTURE EFFICIENCY is the percentage of volatile organic compounds used, emitted, evolved, or generated by the operation, that are collected and directed to an air pollution control device.
- (7) CATALYST is a substance that alters the rate of chemical reaction without participating in that reaction or changing during the course of reaction.
- (8) COATING is a material which is applied to a surface and which forms a continuous film in order to beautify and/or protect such surface.
- (9) CONTRACT PAINTER is a non-manufacturer of metal parts and products who applies coatings to such products at his facility exclusively under contract with one or more parties that operate under separate ownership and control.
- (10) DIP COATING is a method of applying coatings to a substrate by submersion into and removal from a coating bath.
- (11) ELECTRIC-INSULATING VARNISH is a non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.
- (12) ELECTRIC-INSULATING AND THERMAL-CONDUCTING COATING is a coating that displays an electrical insulation of at least 1000 volts DC per mil on a flat test plate and an average thermal conductivity of at least 0.27 BTU per hour-foot-degree-Fahrenheit.
- (13) ELECTROCOATING is a process that uses coating concentrates or pastes added to a water bath. The coating is applied by using an electrical current in either an anodic or cathodic process.
- (14) ELECTROSTATIC APPLICATION is a method of applying coating particles or coating droplets to a grounded substrate by electrically charging them.
- (15) ESSENTIAL PUBLIC SERVICE COATING is a protective (functional) coating applied to components of power, water, and natural gas production, transmission or distribution systems during repair and maintenance procedures.

- (16) ETCHING FILLER is a coating that contains less than 23 percent solids by weight and at least 1/2-percent acid by weight, and is used instead of applying a pretreatment coating followed by a primer.
- (17) EXEMPT COMPOUNDS (see Rule 102-Definition of Terms).
- (18) EXTREME HIGH-GLOSS COATING is a coating which, when tested by the American Society for Testing Material (ASTM) Test Method D-523 adopted in 1980, shows a reflectance of 75 or more on a 60° meter. Effective January 1, 2015, an Extreme High-Gloss coating shall be defined as a coating that shows a reflectance of 85 or more on a 60° meter.
- (19) EXTREME-PERFORMANCE COATING is a coating used on a metal surface where the coated surface is, in its intended use, subject to one or more of the following:
  - (A) Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solution; or
  - (B) Repeated exposure to temperatures in excess of 250° F; or
  - (C) Repeated heavy abrasion. To qualify, the coating must, when tested by ASTM D4060 using a CS 10 wheel with a 1,000 gram load, lose less than 50 mg of coating after 1,000 cycles including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers or scouring agents.; or
  - (D) Application onto fused metal and carbon composite surfaces; or
  - (E) Other operations as approved by the Executive Officer, or designee.

To qualify as an Extreme-Performance Coating, the applicant shall request and receive written approval of a plan, which is subject to all the provisions of Rule 221 – Plans and Rule 306 – Plan Fees, to the Executive Officer, prior to application of such coating, and show that the intended use of each coated object would require coating with an extreme-performance coating pursuant to subdivision (i).
- (20) FLOW COAT is a non-atomized technique of applying coatings to a substrate with a fluid nozzle in a fan pattern with no air supplied to the nozzle.
- (21) GRAMS OF VOC PER LITER OF COATING LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

Grams of VOC per Liter of Coating Less Water and Less Exempt

$$\text{Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

- Where:  $W_s$  = weight of volatile compounds in grams  
 $W_w$  = weight of water in grams  
 $W_{es}$  = weight of exempt compounds in grams  
 $V_m$  = volume of material in liters  
 $V_w$  = volume of water in liters  
 $V_{es}$  = volume of exempt compounds in liters

- (22) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

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

- Where:  $W_s$  = weight of volatile compounds in grams  
 $W_w$  = weight of water in grams  
 $W_{es}$  = weight of exempt compounds in grams  
 $V_m$  = volume of material in liters

- (23) GRAPHIC ARTS COATINGS (Sign Paints) are coatings, excluding materials subject to Rule 1130, formulated for hand-application by artists using brush or roller techniques to indoor and outdoor signs (excluding structural components) and murals, and include lettering enamels, poster colors, copy blockers, and bulletin enamels.

- (~~24~~24) HAND APPLICATION METHODS is the application of coatings by manually held non-mechanically operated equipment. Such equipment includes paintbrushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

- (~~25~~25) HARDENER is a substance or mixture of substances that controls the viscosity of the reactants and products of a chemical reaction; while participating in chemical reaction and becoming part of the product or products of chemical reaction.

- (~~25~~26) HEAT-RESISTANT COATING is a coating that must withstand a temperature of at least 400°F during normal use.

- (2627) HIGH-PERFORMANCE ARCHITECTURAL COATING is a coating used to protect architectural subsections and which meets the requirements of the Architectural Aluminum Manufacturer Association's publication number AAMA 605.2-1980.
- (2728) HIGH-TEMPERATURE COATING is a coating that is certified to withstand a temperature of 1000°F for 24 hours.
- (2829) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is a coating application system 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 the air horns.
- (2930) INK is a fluid that contains dyes and/or colorants and is used to make markings but not to protect surfaces.
- (31) LACQUERS are clear or opaque coatings formulated with thermoplastic or synthetic resins that dry by solvent evaporation without chemical reaction.
- (3032) MAGNETIC DATA STORAGE DISK COATING is a coating used on a metal disk which stores data magnetically.
- (33) METAL COATINGS are coatings applied or intended to be applied to metal parts or products.
- (3434) METAL PARTICLES are pieces of an elemental pure metal or a combination of elemental metals.
- (3235) METAL PARTS AND PRODUCTS are any components or complete units fabricated from metal, except those subject to the coating provisions of other source specific rules of Regulation XI.
- (3336) METALLIC COATING is a coating which contains more than 5 grams of metal particles per liter of coating, as applied.
- (3437) MIL is 0.001 inch.
- (3538) MILITARY SPECIFICATION COATING is a coating applied to metal parts and products and which has a paint formulation approved by a United States Military Agency for use on military equipment.
- (3639) MOLD-SEAL COATING is 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.
- (3740) MOTOR VEHICLE is a passenger car, light-duty truck, medium-duty vehicle, or heavy-duty vehicle as defined in Section 1902, Title 13, of the California Administrative Code.

- (3841) MULTI-COMPONENT COATING is a coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to form an acceptable dry film.
- (3942) ONE-COMPONENT COATING is a coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner, necessary to reduce the viscosity, is not considered a component.
- (4043) OPTICAL ANTI-REFLECTION COATING is a coating with a low reflectance in the infrared and visible wavelength range and is used for anti-reflection on or near optical and laser hardware.
- (4144) PAN-BACKING COATING is a coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating elements.
- (45) PERSON (see Rule 102-Definition of Terms).
- (4246) PHOTORESIST COATING is a coating applied directly to a metal substrate to protect surface areas when chemical milling, etching, or other chemical surface operations are performed on the substrate.
- (4347) PHOTORESIST OPERATION is a process for the application and development of photoresist coating on a metal substrate, including preparation (except primary cleaning), soft bake, development, hard bake, and stripping, and can be generally subdivided as follows:
- (A) NEGATIVE PHOTORESIST OPERATION is a process where the photoresist hardens when exposed to light and the unhardened photoresist is stripped, exposing the metal surface for etching.
  - (B) POSITIVE PHOTORESIST OPERATION is a process where the photoresist softens when exposed to light and the softened photoresist is stripped, exposing the metal surface for etching.
- (4448) PREFABRICATED ARCHITECTURAL COMPONENT COATINGS are coatings applied to metal parts and products ~~which~~that are to be used as an architectural structures or their appurtenances including, but not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain-gutters and down-spouts, window screens, lamp-posts, heating and air conditioning equipment, other mechanical equipment and large fixed stationary tools.
- (4549) PRETREATMENT COATING is a coating which contains no more than 12 percent solids by weight, and at least 1/2-percent acid, by weight, is

used to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

(4650) REACTIVE DILUENT is a liquid which is a VOC during application and one in which, through chemical reaction such as polymerization, 20 percent or more of the VOC becomes an integral part of a finished coating. For coatings that contain reactive diluents, the Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds shall be calculated by the following equation:

$$\frac{\text{Grams of VOC per Liter of Coating Less Water and Less Exempt Compounds}}{\text{}} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

- Where:
- $W_s$  ≡ weight of volatile compounds not consumed during curing, in grams
  - $W_w$  ≡ weight of water not consumed during curing, in grams
  - $W_{es}$  ≡ weight of exempt compounds not consumed during curing, in grams
  - $V_m$  ≡ volume of the material prior to reaction, in liters
  - $V_w$  ≡ volume of water not consumed during curing, in liters
  - $V_{es}$  ≡ volume of exempt compounds not consumed during curing, in liters

(4751) REPAIR COATING is a coating used to recoat portions of a part or product which has sustained mechanical damage to the coating ~~following normal painting operations~~ after it has fully cured.

(4852) ROLL COAT is a coating method using a machine that applies coating to a substrate by continuously transferring coating through a pair or set of oppositely rotating rollers.

(4953) SAFETY-INDICATING COATING is a coating which changes physical characteristics, such as color, to indicate unsafe conditions.

(5054) SILICONE-RELEASE COATING is any coating which contains silicone resin and is intended to prevent food from sticking to metal surfaces such as baking pans.

(5155) SOLAR-ABSORBENT COATING is a coating which has as its prime purpose the absorption of solar radiation.

- (5256) SOLID-FILM LUBRICANT is a very thin coating consisting of a binder system containing as its chief pigment material one or more of molybdenum disulfide, graphite, polytetrafluoroethylene (PTFE) or other solids that act as a dry lubricant between faying surfaces.
- (5357) STENCIL COATING is an ink or a coating which is rolled or brushed onto a template or stamp in order to add identifying letters and/or numbers to metal parts and products.
- (58) STRIPPING is the removal of cured coatings, cured inks, or cured adhesives.
- (59) SUPER-COMPLIANT MATERIAL is any material containing 50 grams or less of VOC per liter of material.
- (5460) TEXTURED FINISH is a rough surface produced by spraying and splattering large drops of coating onto a previously applied coating. The coatings used to form the appearance of the textured finish are referred to as textured coatings.
- (5561) TOUCH-UP COATING is a coating used to cover minor coating imperfections appearing after the ~~main coating operation~~original coating has fully cured.
- (5662) TRANSFER EFFICIENCY is the ratio of the weight or volume of coating solids adhering to an object to the total weight or volume, respectively, of coating solids used in the application process, expressed as a percentage.
- (63) ULTRAVIOLET THIN-FILM COATING is UV-radiation curable coating less than 15 micrometers in thickness consisting of acrylate monomers, oligomers, and blends which are not subjected to a pre-cure water or solvent drying step. The VOC content may be determined by manufacturers using ASTM Test Method 7767-11 Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them.
- (5764) VACUUM-METALIZING COATING is the undercoat applied to the substrate on which the metal is deposited or the overcoat applied directly to the metal film.
- (5865) VOLATILE ORGANIC COMPOUND (VOC) (see Rule 102-Definition of Terms).
- (66) WATERBORNE COATING is any coating which contains more than 50 percent water by volume in its volatile fraction, as applied.

(c) Requirements

(1) Operating Equipment

A person shall not apply VOC-containing coatings to metal parts and products subject to the provisions of this rule unless the coating is applied with equipment operated according to the equipment manufacturer specifications, and by the use of one of the following methods:

- (A) Electrostatic application, or
- (B) Flow coat, or
- (C) Dip coat, or
- (D) Roll coat, or
- (E) High-Volume, Low-Pressure (HVLP) Spray, or
- (F) Hand Application Methods, or
- (G) Such other coating application methods as are demonstrated to the Executive Officer to be capable of achieving a transfer efficiency equivalent or better to the method listed in subparagraph (c)(1)(E) and for which written approval of the Executive Officer has been obtained, or

(H) Application equipment as approved by the Executive Officer, or designee, provided that the applicator submits and receives written approval of a plan, which is subject to all the provisions of Rule 221 – Plans and Rule 306 – Plan Fees, to the Executive Officer, prior to application of such coating, and demonstrates that the use of HVLP spray equipment would result in greater emissions. The approval shall be limited to those coatings listed in the approved plan.

(2) VOC Content of Coatings

(A) Until December 31, 2014, A-a person shall not apply any coating to metal parts and products subject to the provisions of this rule, any coatings, including any VOC containing materials added to the original coating supplied by the manufacturer, which contain that contains VOC in excess of the limits specified in Table 1 below:

Table 1 – Coating Categories and VOC Limits

<b>VOC LIMITS</b>								
<b>Less Water and Less Exempt Compounds</b>								
<b>Effective Dates Until 12/31/2014</b>								
<b>Coating</b>	<b>Air-Dried</b>				<b>Baked</b>			
	<b>gm/l</b>		<b>lb/gal</b>		<b>gm/l</b>		<b>lb/gal</b>	
	<b>Current</b>	<b>7/1/07</b>	<b>Current</b>	<b>7/1/07</b>	<b>Current</b>	<b>7/1/07</b>	<b>Current</b>	<b>7/1/07</b>
General One-Component <sup>1</sup>	275	<del>275</del>	2.3	<del>2.3</del>	275	<del>275</del>	2.3	<del>2.3</del>
General Multi-Component <sup>1</sup>	340	<del>340</del>	2.8	<del>2.8</del>	275	<del>275</del>	2.3	<del>2.3</del>
Military Specification	340	<del>340</del>	2.8	<del>2.8</del>	275	<del>275</del>	2.3	<del>2.3</del>
Etching Filler	420	<del>420</del>	3.5	<del>3.5</del>	420	<del>420</del>	3.5	<del>3.5</del>
Solar-Absorbent	420	<del>420</del>	3.5	<del>3.5</del>	360	<del>360</del>	3.0	<del>3.0</del>
Heat-Resistant	420	<del>420</del>	3.5	<del>3.5</del>	360	<del>360</del>	3.0	<del>3.0</del>
Extreme High-Gloss	<del>420</del> 340	340	<del>3.5</del> 2.8	2.8	360	<del>360</del>	3.0	<del>3.0</del>
Metallic	420	<del>420</del>	3.5	<del>3.5</del>	420	<del>420</del>	3.5	<del>3.5</del>
Extreme Performance	420	<del>420</del>	3.5	<del>3.5</del>	360	<del>360</del>	3.0	<del>3.0</del>
Prefabricated Architectural One-Component	<del>420</del> 275	275	<del>3.5</del> 2.3	2.3	275	<del>275</del>	2.3	<del>2.3</del>
Prefabricated Architectural Multi-Component	<del>420</del> 340	340	<del>3.5</del> 2.8	2.8	275	<del>275</del>	2.3	<del>2.3</del>
Touch Up	420	<del>420</del>	3.5	<del>3.5</del>	360	<del>360</del>	3.0	<del>3.0</del>
Repair	420	<del>420</del>	3.5	<del>3.5</del>	360	<del>360</del>	3.0	<del>3.0</del>
Silicone Release	420	<del>420</del>	3.5	<del>3.5</del>	420	<del>420</del>	3.5	<del>3.5</del>
High-Performance Architectural	420	<del>420</del>	3.5	<del>3.5</del>	420	<del>420</del>	3.5	<del>3.5</del>
Camouflage	420	<del>420</del>	3.5	<del>3.5</del>	420	<del>420</del>	3.5	<del>3.5</del>
Vacuum-Metalizing	420	<del>420</del>	3.5	<del>3.5</del>	420	<del>420</del>	3.5	<del>3.5</del>
Mold-Seal	420	<del>420</del>	3.5	<del>3.5</del>	420	<del>420</del>	3.5	<del>3.5</del>

<sup>1</sup> Lacquers currently under General One-Component and General Multi-Component categories.

<b>VOC LIMITS (Continued)</b> <b>Less Water and Less Exempt Compounds</b> <b>Effective Dates Until 12/31/2014</b>								
Coating	Air-Dried				Baked			
	gm/l		lb/gal		gm/l		lb/gal	
	Current	7/1/07	Current	7/1/07	Current	7/1/07	Current	7/1/07
<u>High-Temperature</u>	<u>420</u>		<u>3.5</u>		<u>420</u>		<u>3.5</u>	
Electric-Insulating Varnish	420	420	3.5	3.5	420	420	3.5	3.5
Pan Backing	420	420	3.5	3.5	420	420	3.5	3.5
Pretreatment Coatings	420	420	3.5	3.5	420	420	3.5	3.5
Graphic Arts	<u>500</u>		<u>4.2</u>		<u>500</u>		<u>4.2</u>	

(B) Effective January 1, 2015, a person shall not apply any coating subject to this rule that contains VOC in excess of the limits specified in Table 2 below:

**Table 2 – Coating Categories and VOC Limits**

<b>Coating</b>	<b>Air-Dried</b>		<b>Baked</b>	
	<b>gm/L (lb/gal)</b>		<b>gm/L (lb/gal)</b>	
	<b>1/1/2015</b>	<b>1/1/2018</b>	<b>1/1/2015</b>	<b>1/1/2018</b>
<u>General</u>	<u>150 (1.3)</u>	<u>100 (0.8)</u>	<u>150 (1.3)</u>	<u>100 (0.8)</u>
<u>General (waterborne)</u>	<u>275 (2.3)*</u>	<u>200 (1.6)**</u>	<u>275 (2.3)*</u>	<u>200 (1.6)**</u>
<u>Lacquer</u>	<u>275 (2.3)</u>	<u>275 (2.3)</u>	<u>275 (2.3)</u>	<u>275 (2.3)</u>
<u>Military Specification</u>	<u>340 (2.8)</u>	<u>340 (2.8)</u>	<u>275 (2.3)</u>	<u>275 (2.3)</u>
<u>Etching Filler</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>Solar-Absorbent</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>360 (3.0)</u>	<u>360 (3.0)</u>
<u>Heat-Resistant</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>360 (3.0)</u>	<u>360 (3.0)</u>
<u>Extreme High-Gloss</u>	<u>340 (2.8)</u>	<u>340 (2.8)</u>	<u>360 (3.0)</u>	<u>360 (3.0)</u>
<u>Metallic</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>Extreme Performance</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>360 (3.0)</u>	<u>360 (3.0)</u>
<u>Touch Up</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>360 (3.0)</u>	<u>360 (3.0)</u>
<u>Repair</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>360 (3.0)</u>	<u>360 (3.0)</u>
<u>Silicone Release</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>High-Performance Architectural</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>Camouflage</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>Vacuum-Metalizing</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>Mold-Seal</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>High-Temperature</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>Electric-Insulating</u>				
<u>Varnish</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>Pan Backing</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>Pretreatment Coatings</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>	<u>420 (3.5)</u>
<u>Graphic Arts</u>	<u>150 (1.3)</u>	<u>150 (1.3)</u>	<u>150 (1.3)</u>	<u>150 (1.3)</u>

\*Must also have a material VOC less than 150 g/L (1.3 lb/gal)

\*\*Must also have a material VOC less than 100 g/L (0.8 lb/gal)

(3) Effective November 2, 2012, tertiary-butyl acetate (t-BAc) and dimethyl carbonate (DMC) shall be considered exempt compounds in determining compliance with the VOC content requirements in subparagraphs (c)(2)(A) and (c)(2)(B), provided the application of t-BAc and DMC-containing coating is done in a District-permitted spray booth or in a District-permitted fully enclosed area where an exhaust fan discharges the

exhaust air from the equipment to the outside of the building, operated in accordance with all permit conditions; and the following:

(A) Facilities that emit 560 pounds or more per year of t-BAc or 180,000 pounds or more per year of DMC shall apply and obtain an approved permit to operate or modified permit to operate prior to emitting more than the above threshold in any consecutive 12 month period. The permit shall not be issued unless the following criteria are met:

(i) Limit any increase in maximum individual cancer risk to less than ten in one million ( $10 \times 10^{-6}$ ) at any off-site receptor location; and

(ii) Limit any cumulative increase in total chronic hazard index for any target organ system to less than 1.0 at any off-site receptor location; and

(iii) Limit any cumulative increase in total acute hazard index for any target organ system to less than 1.0 at any off-site receptor location;

Calculations to determine maximum individual cancer risk, total chronic hazard index and total acute hazard index shall follow the Risk Assessment Procedures for Rules 1401 and 212 and using an inhalation cancer potency of 2.0E-03 and an acute reference exposure limit (REL) of 10,000 microgram/meter<sup>3</sup> for t-BAc and using an acute REL of 18,000 microgram/meter<sup>3</sup> and a chronic REL of 5,500 microgram/meter<sup>3</sup> for DMC; and

(B) Facilities that emit less than 560 pounds per year of t-BAc or less than 180,000 pounds of DMC shall file with the District in accordance with subdivision (m) of this rule. Any person using a coating or thinner containing DMC or t-BAc shall maintain records pursuant to paragraph (j)(2).

T-BAc will continue to be considered a VOC for purposes of all recordkeeping and emissions reporting which apply to VOCs.

(34) A person shall not use VOC-containing materials which have a VOC content of more than 200 grams per liter of material for stripping any coating governed by this rule.

- (45) Containers used for the disposal of cloth or paper used in stripping cured coating shall be closed except when depositing or removing the cloth or paper from the container.
- (56) Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in cleaning operations shall be carried out pursuant to Rule 1171 - Solvent Cleaning Operations.
- (67) All VOC containing coatings shall be stored in non-absorbent, non-leaking containers which shall be kept closed at all times except when in use. ~~For coatings that contain reactive diluents, the Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds shall be calculated by the following equation:~~

~~Grams of VOC per Liter of Coating Less Water and Less Exempt Compounds = 
$$\frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$~~

- ~~Where:  $W_s$  = weight of volatile compounds not consumed during curing, in grams~~
- ~~$W_w$  = weight of water not consumed during curing, in grams~~
- ~~$W_{es}$  = weight of exempt compounds not consumed during curing, in grams~~
- ~~$V_m$  = volume of the material prior to reaction, in liters~~
- ~~$V_w$  = volume of water not consumed during curing, in liters~~
- ~~$V_{es}$  = volume of exempt compounds not consumed during curing, in liters~~

- (78) Owners and/or operators of control equipment may comply with provisions of paragraph (c)(1) and/or (c)(2) by using approved air pollution control equipment provided:
  - (A) the control device reduces VOC emissions from an emission collection system by at least 95 percent by weight or the output of the air pollution control device is no more than 5 PPM VOC by volume calculated as carbon with no dilution; and
  - (B) the owner/operator demonstrates that the emission collection system collects at least 90 percent by weight of the VOC emissions generated by the sources of VOC emissions.

(d) Prohibition of Specifications and Sale

~~A person shall not specify the use in the District of any coating to be applied to any metal parts and products subject to the provisions of this rule that does not meet the limits and requirements of this rule. The requirements of this paragraph shall apply to all written and oral contracts.~~

(1) Effective January 1, 2015, except as provided in subdivision (f) and paragraphs (d)(2) and (d)(3), a person shall not supply, sell, distribute, offer for sale or specify for use, any metal coating in the District that, at the time of manufacture, contains VOC in excess of the applicable limit specified in paragraph (c)(2). The requirements of this paragraph shall apply to all written and oral contracts.

(2) Effective January 1, 2015, a person shall not supply, sell, offer for sale or specify any metal coating or thinner to an end user that contains DMC or t-BAC prior to verifying compliance with paragraph (c)(3) by obtaining a copy of the permit or applicable filing issued by or filed with the District in accordance with paragraph (c)(3).

(3) Effective January 1, 2014, a person shall not supply, sell, offer for sale, specify or apply any metal coating, thinner or stripper subject to this rule that contains in the excess of 0.1% by weight any Group II exempt compounds listed in Rule 102. Cyclic, branched, or linear, completely methylated siloxanes (VMS) are not subject to this prohibition.

(4) Paragraphs (d)(1), (d)(2) and (d)(3) shall not apply to the following:

(A) Metal coatings manufactured, formulated, repackaged, shipped, supplied or sold to a person for use outside the SCAQMD; or

(B) Metal coatings for use at a facility that certifies having pollution control equipment in compliance with the requirements of paragraph (c)(8); or

(C) Any person who supplies, sells, distributes, offers for sale or specifies for use a metal coating provided the coating was sold to an independent distributor provided that the recipient was informed in writing by the manufacturer or supplier of the condition that the metal coating is not to be used in the District or that the metal coating does not comply with the VOC limits in paragraph (c)(2);  
or

- (D) Any person who supplies, sells, distributes, offers for sale or specifies for use a metal coating provided the coating was sold to another person for repackaging; or
- (E) Any metal coating that is labeled for use on metal surfaces subject to another Regulation XI rule for coatings or labeled for multiple substrates, provided that the coating complies with the applicable requirements of the labeled Regulation XI rule for coatings. Information regarding use on multiple substrates may be given on a data sheet; or
- (F) Any metal coating that is labeled and supplied, sold, or offered for sale as an architectural coating that complies with Rule 1113; or
- (G) Any metal coating that is sold to a purchaser who agrees in writing to comply with all applicable District rules prior to sale.

(e) Methods of Analysis

All applicable methods of analysis shall be as cited ~~in paragraphs (e)(1) through (e)(6)~~ below, or any other applicable method approved by the Executive Officer, United States Environmental Protection Agency (USEPA), and the California Air Resources Board (CARB).

(1) Determination of VOC content

The volatile organic content of coatings subject to the provisions of this rule shall be determined by the following methods:

- (A) USEPA Reference Method 24 (Code of Federal Regulations Title 40 Part 60, Appendix A). The exempt solvent content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,
- (B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.
- (C) Exempt Perfluorocarbon Compounds  
The following classes of 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, will be analyzed as exempt compounds for compliance with paragraph (c), only when manufacturers specify which individual compounds are used in the coating formulation. In addition, the manufacturers must identify the USEPA, CARB, and the SCAQMD approved test methods used to quantify the amount of each exempt compound.

(2) Determination of the Acid Content of Pretreatment Coatings and Etching Fillers

The acid content of pretreatment coatings and etching fillers shall be measured by ASTM Test Method D1613.

(3) Determination of the Metal Particle Content of Metallic Coatings  
The metal particle content of metallic coatings subject to the provisions of this rule shall be determined by the following methods:

(A) SCAQMD Method 318 (Determination of Weight Percent of Elemental Metal in Coatings by X-ray Defraction Method) contained in the SCAQMD "Laboratory Method of Analysis of Enforcement Samples" manual for coatings containing elemental aluminum metal; or

(B) SCAQMD Method 311 (Analysis of Percent Metal in Metallic Coatings by Spectrographic Method) contained in the SCAQMD "Laboratory Method of Analysis of Enforcement Samples" manual for all other non-aluminum particle content analyses.

(4) Determination of Efficiency of Emission Control System

(A) Capture efficiency specified in paragraph (c)(78), shall be determined by the procedures presented in the USEPA technical guidance document, "Guidelines for Determining Capture Efficiency, January 9, 1995." Notwithstanding the test methods specified by the Guidelines, any other method approved by the USEPA, CARB, and the SCAQMD Executive Officer may be substituted.

(B) The efficiency of the control device of the emission control system as specified in paragraph (c)(78) and the VOC content in the

control device exhaust gases, measured and calculated as carbon, shall be determined by the USEPA Test Methods 25, 25A, SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon), or SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources) as applicable. USEPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(5) Multiple Test Methods

When more than one test method or set of methods are 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 the rule.

(6) Demonstrations of transfer efficiency shall be conducted in accordance with SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User," May 24, 1989.

(7) Metal coating viscosity shall be determined by ASTM D 1200-10 Standard Test Method for Viscosity by Ford Viscosity Cup.

(8) Metal coating gloss shall be determined by ASTM Test Method D 523-80 Standard Test Method for Specular Gloss.

(f) Exemptions

(1) The provisions of paragraphs (c)(1), ~~and (c)(2)~~ and (d)(1) of this rule shall not apply to:

- (A) Stencil coatings;
- (B) Safety-indicating coatings;
- (C) Magnetic data storage disk coatings;
- (D) Solid-film lubricants;
- (E) Electric-insulating and thermal-conducting coatings.

(2) The provisions of paragraphs (c)(1) and (d)(1) of this rule shall not apply to ~~the application of touch-up coatings, repair coatings, and textured finishes. This exemption shall expire for the application of metallic coatings which have a metallic content of 30 grams per liter, mold seal coatings, and to facilities that use less than 3 gallons per day or less than 66 gallons per calendar month of coating, as applied, including an VOC~~

~~containing materials added to the original coating as supplied by the manufacturer, effective July 1, 2006.~~

- (3) The provisions of paragraphs (c)(1), (c)(2), ~~and (c)(3)~~, (d)(1) and (d)(2) of this rule do not apply to the application of coatings and use of cleaning solvents ~~while used for~~ conducting performance tests on the coatings at paint manufacturing facilities.
- ~~(4) The provisions of paragraph (c)(2) of this rule shall not apply to high-performance architectural, vacuum metalizing, and/or pretreatment coatings used at a facility which has the potential to emit a total of 10 tons or less per year of VOCs, before application of add-on controls.~~
- ~~(54)~~ The provisions of paragraphs (c)(1), (c)(2), (d)(1), (d)(2) and (j)(1) of this rule shall not apply to aerosol coating products.
- ~~(65)~~ The provisions of paragraphs (c)(2), (c)(3), (d)(1), (d)(2) and (j)(1) of this rule shall not apply to ~~the use of~~ essential public service coatings with VOC contents of 500 g/l or less provided such aggregate use does not exceed 55 gallons in any one calendar year per facility.
- ~~(76)~~ The provisions of paragraphs (c)(2) and (d)(1) of this rule shall not apply to ~~the use of~~ optical anti-reflective coatings provided such aggregate use does not exceed 10 gallons in any one calendar year, per facility.
- ~~(8) The provisions of paragraph (c)(2) shall not apply to electrocoatings provided the VOC content of coating concentrates do not exceed 450 grams per liter, less water and less exempt compounds, and the usage of coating concentrates is less than 66 gallons per calendar month, per facility, including any VOC containing materials added to the concentrate, as supplied by the manufacturer, and any VOC containing materials added to the bath as make-up solvents.~~
- ~~(97)~~ The provisions of paragraphs (c)(2) and (d)(1) shall not apply to photoresist operations applying liquid photoresist coating used for photofabrication of metal substrates with a thickness not exceeding 0.060 inches provided the annual usage per facility is 10 gallons or less.
- ~~(8)~~ The provisions of paragraph (c)(1) shall not apply to metal coatings with a viscosity of 650 centipoise or greater, as applied.
- ~~(9)~~ The provisions of paragraph (j)(1) shall not apply to any Super Compliant Material(s). This exemption shall only apply to facilities that demonstrate that total permitted and non-permitted facility VOC emissions do not

exceed 4 tons in any calendar year, including emissions from the Super Compliant Material, as demonstrated by annual purchase records.

(g) Rule 442 Applicability

Any coating, coating operation, or facility which is exempt from all or a portion of the VOC limits of this rule shall comply with the provisions of Rule 442.

(h) Alternative Emission Control Plan

An owner/operator may achieve compliance with paragraph (c)(2) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(i) Qualification for Classification as Extreme-Performance Coating

~~A coating may be classified as an extreme performance coating provided that the applicator requests and receives written approval of such classification from the Executive Officer, or designee, prior to application of such coating, and shows that the intended use of each coated object would require coating with an extreme performance coating.~~The Any request to classify a material as an Extreme Performance Coating pursuant to subparagraph (b)(19)(E) must include, at a minimum, the following information:

- (1) Name, Location and SCAQMD Facility ID;
- (2) Material Safety Data Sheet of requested Extreme-Performance Coating;
- (3) Volume of requested Extreme Performance Coating used;
- (4) Description of process including products and parts coated;
- (5) List of equipment utilizing the requested Extreme Performance Coating;
- (6) Calculation of emissions from the requested Extreme Performance Coating operation; and
- (7) Explanation why an Extreme Performance Coating is necessary.

(j) Recordkeeping and Reporting

- (1) Records of coating and solvent usage shall be maintained pursuant to Rule 109.
- (2) Any person using a coating or solvent containing DMC or t-BAC shall maintain daily records of operations for the most recent two (2) year period. The records shall be retained on the premises of the affected operation for a period of not less than two (2) years unless a longer time period is specified in an applicable rule or permit. Said records shall be

made available to the District upon request. The records shall include, but not be limited to, the following:

(A) a list of the permit units involved in the operation(s) using DMC or t-BAc;

(B) the amount and type of coating (including catalyst and reducer), and/or solvent used in each permit unit; and

(C) the DMC and t-BAc content in each coating as applied (including catalyst and reducer), and/or solvent.

(3) Any person using a coating or solvent containing t-BAc shall submit an annual report in an electronic format approved by the Executive Officer within 90 days after the reporting year.

**(k) Emission Reduction Credits**

Facilities that use high-performance architectural, pretreatment, or vacuum-metalizing coatings shall not receive emission reduction credit(s) pursuant to SCAQMD Rule 1309 above those emission reduction credit(s) that the facility would have received if it was operated with coatings having a VOC content of no more than 420 grams per liter, less water and less exempt compounds.

**(l) Sell-Through and Use-Through Provision**

Any metal coating that is manufactured prior to the effective date of the applicable limit, and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, offered for sale, or applied for up to twelve months after the specified effective date.

**(m) Filing Process**

Facilities that file with the District for the purposes of using DMC and/or t-BAc containing products may do so by submitting the complete and applicable information required

(1) SCAQMD ID number;

(2) Applicable permit number(s);

(3) Product name(s), t-BAc and/or DMC content, and maximum annual use for each coating.

**(n) Fees**

The operator of any activity or facility subject to filing pursuant to this rule shall be subject to a one-time fee equivalent to the plan submittal fee in accordance with Rule 306 (c) at the time of filing.