10 CSR 10-5.330 Control of Emissions From Industrial Surface Coating Operations

(1) Applicability.

(A) This rule applies throughout St. Louis City and Jefferson, St. Charles, Franklin, and St. Louis Counties.

(B) This rule applies to any facility with actual emissions of volatile organic compounds (VOCs) from industrial surface coating operations, including related cleaning activities, of at least three (3) tons per twelve (12)-month rolling period, before consideration of controls.

(C) Exemptions. This rule is not applicable to the following:

1. Motor vehicle refinishing;

2. Customizing top coating of motor vehicles, if production is less than thirty-five (35) vehicles per day;

3. Surface coating that is part of janitorial, building, and facility maintenance operations;

4. Research and development, performance testing, and quality control of coatings and surface coated products;

5. Aerosol coating products subject to 40 CFR 59 Subpart C or E;

6. Field application of architectural coatings to buildings, building components, and stationary structures;

7. Powder coatings;

8. Surface coating and cleaning of aerospace vehicles or components at an aerospace manufacture or rework facility that—

A. Is subject to the requirements and/or aerospace-specific exemptions of 10 CSR 10-5.295; or

B. Is not subject to 10 CSR 10-5.295 because the facility's potential to emit VOCs from aerospace surface coating and cleaning is twenty-five (25) tons per year or less;

9. Surface coating and cleaning of wood furniture or wood furniture components at a wood furniture manufacturing facility that—

A. Is subject to the requirements and/or wood furniture-specific exemptions of 10 CSR 10-5.530; or

B. Is not subject to 10 CSR 10-5.530 because the facility's potential to emit VOCs from wood furniture coating and cleaning is less than twenty-five (25) tons per year;

10. Application and storage of coatings that are subject to the requirements of 40 CFR 59, Subpart D;

11. Printing operations that are subject to the requirements of 10 CSR 10-5.340 or 10 CSR 10-5.442;

12. Surface coating and cleaning of articles used for internal company operations, including, but not limited to, work stands; scaffolding; jigs; tooling; dollies; tow bars; aircraft ground support equipment; portable equipment used for maintenance, testing, fabrication, or repair; toolboxes; storage bins; shelving; and other manufacturing or warehouse support items;

13. Surface coating operations which do not have a VOC limit in section (3) of this rule;

14. Adhesives and sealants that contain less than 0.17 pounds of VOC per gallon of coating (less water and exempt compounds) as-applied;

15. Cyanoacrylate adhesives;

16. Adhesives, sealants, adhesive primers, and sealant primers that are supplied by the manufacturer or supplier in containers with a net volume of sixteen (16) fluid ounces or less, or a net weight of one (1) pound or less, except plastic cement welding adhesives and contact adhesives;

17. Contact adhesives that are supplied by the manufacturer or supplier in containers with a net volume of one (1) gallon or less; and

18. Adhesives, sealants, adhesive primers, sealant primers, surface preparation, and cleanup solvents that are used in the following operations:

A. Tire repair operations, provided the adhesive is labeled for tire repair only;

B. Assembly, repair, and manufacture of aerospace components or undersea-based weapons systems components;

C. Plastic solvent welding operations used in the manufacture of medical devices or in the manufacture of medical equipment; and

D. Plaque laminating operations in which adhesives are used to bond clear, polyester acetate laminate to wood with lamination equipment installed prior to July 1, 1992.

(D) Once a facility exceeds the applicability level of this rule, it shall remain subject to this rule until it can demonstrate, to the satisfaction of the director, that the actual total VOC emissions from surface coating operations, including related cleaning activities and before consideration of controls, is below three (3) tons per twelve (12)-month rolling period for sixty (60) consecutive months.

(2) Definitions.

(A) All terms beginning with A.

1. ABS plastic solvent welding—A process to weld acrylonitrile-butadiene-styrene pipe.

2. Actual emissions—The actual rate of emissions of a pollutant from a source operation is determined as follows:

A. Actual emissions as of a particular date shall equal the average rate, in tons per twelve (12)-month rolling period, at which the source operation or facility actually emitted the pollutant during the previous two (2)-year period and which represents normal operation. A different time period for averaging may be used if the director determines it to be more representative. Actual emissions shall be calculated using actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period;

B. The director may presume that source-specific allowable emissions for a source operation or facility are equivalent to the actual emissions of the source operation or facility; and

C. For source operations or facilities, which have not begun normal operations on the particular date, actual emissions shall equal the potential emissions of the source operation or facility on that date.

3. Add-on control—An air pollution control device, such as a thermal oxidizer or carbon adsorber, that reduces pollution in an air stream by destruction or removal before discharge to the atmosphere.

4. Adhesion primer—A coating that is applied to a polyolefin part to promote the adhesion of a subsequent coating. An adhesion primer is clearly identified as an adhesion primer or adhesion promoter on its material safety data sheet.

5. Adhesive—Any chemical substance that is applied for the purpose of bonding two (2) surfaces together other than by mechanical means. For the purposes of this rule, an adhesive is considered a surface coating.

6. Adhesive application process—A series of one (1) or more adhesive applicators and any associated drying area and/or oven wherein an adhesive is applied, dried, and/or cured. An application process ends at the point where the adhesive is dried or cured, or prior to any subsequent application of a different adhesive. It is not necessary for an application process to have an oven or flash-off area.

7. Adhesive primer—A product intended by the manufacturer for application to a substrate, prior to the application of an adhesive, to provide a bonding surface.

8. Aerospace vehicle or component—Any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including, but not limited to, airplanes, helicopters, missiles, rockets, and space vehicles.

9. Air-dried coating—The coatings which are dried by the use of air or forced warm air at temperatures up to ninety degrees Celsius (90°C) (one hundred ninety-four degrees Fahrenheit (194°F)).

10. Airless spray and air-assisted airless spray—Any paint spray technology that relies solely on the fluid pressure of the paint to create an atomized paint spray pattern and does not apply any atomizing compressed air to the paint before it leaves the paint nozzle. Air-assisted airless spray uses compressed air to shape and distribute the fan of atomized paint, but still uses fluid pressure to create the atomized paint.

11. Antifoulant coating—A coating applied to the underwater portion of a pleasure craft to prevent or reduce the attachment of biological organisms, and registered with the U.S. Environmental Protection Agency as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136) promulgated as of September 28, 2012, and hereby incorporated by reference in this rule, as published by the Office of the Law Revision Counsel of the House of Representatives. Copies can be obtained from the U.S.

Publishing Office Bookstore, 710 N. Capitol Street NW, Washington DC 20401. This rule does not incorporate any subsequent amendments or additions.

12. Antifoulant sealer/tie coating—A coating applied over biocidal antifoulant coating for the purpose of preventing release of biocides into the environment and/or to promote adhesion between an antifoulant and a primer or other antifoulant.

13. As-applied—The volatile organic compound and solids content of the finishing material that is actually used for coating the substrate. It includes the contribution of materials used for in-house dilution of the finishing material.

14. As-received—The condition of a coating as delivered to the user.

15. Automobile—A motor vehicle designed to carry up to eight (8) passengers, excluding vans, sport utility vehicles, and motor vehicles designed primarily to transport light loads of property.

16. Automobile and light-duty truck assembly plant—A facility which assembles automobiles or light-duty trucks, including coating facilities and processes.

(B) All terms beginning with B.

1. Baked coating—A coating that is cured at a temperature at or above one hundred ninety-four degrees Fahrenheit (194°F).

2. Basecoat—A coat of colored material, usually opaque, that is applied before graining inks, glazing coats, or other opaque finishing materials and is usually topcoated for protection.

3. Bedliner—A multi-component coating applied to a cargo bed after the application of topcoat to provide additional durability and chip resistance. For automobile and light-duty truck assembly coating facilities a bedliner is applied outside of the topcoat operation.

4. Business machine—A device that uses electronic or mechanical methods to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission, including devices listed in standard industrial classification numbers 3572, 3573, 3574, 3579, 3661, and photocopy machines, a subcategory of standard industrial classification number 3861.

(C) All terms beginning with C.

1. Camouflage coating—A coating, used principally by the military, to conceal equipment from detection.

2. Can coating—A surface coating applied to a cylindrical steel or aluminum container. The container can be two (2) pieces (made by a drawn and wall-ironed shallow cup with only one (1) end) or three (3) pieces (made by a rectangular material rolled into a cylinder and the attachment of two (2) end pieces).

3. Can end—A can part manufactured from metal substrate for the purpose of sealing the ends of can bodies.

4. Capture device—A hood, enclosed room, floor sweep, or other means of containing or collecting solvent emissions or other pollutants into a duct so that the pollutant can be directed to an add-on control device such as an incinerator or carbon adsorber.

5. Capture efficiency—The fraction of all organic vapors or other pollutants generated by a process that is directed to a control device.

6. Capture system—One (1) or more capture devices intended to collect emissions generated by a coating operation in the use of coatings or cleaning materials, both at the point of application and at subsequent points where emissions from the coatings and cleaning materials occur, such as flash-off, drying, or curing. Multiple capture devices that collect emissions generated by a coating operation are considered a single capture system.

7. Carbon adsorption system—A device containing adsorbent material (for example, activated carbon, aluminum, silica gel); an inlet and outlet for exhaust gases; and a system to regenerate the saturated adsorbent. The carbon adsorption system must provide for the proper disposal or reuse of all volatile organic compounds adsorbed.

8. Cavity wax—A coating applied into the cavities of the vehicle primarily for the purpose of enhancing corrosion protection.

9. Ceramic tile installation adhesive—Any adhesive intended by the manufacturer for use in the installation of ceramic tiles.

10. Class I hardboard—A hardboard panel that meets the specifications of American National Standard A135.5-2004, as approved by the American National Standards Institute in 2004, and hereby incorporated by reference in this rule, as published by the Composite Panel Association, 18922 Premiere Court, Gaithersburg, MD 20879-1574.

This rule does not incorporate any subsequent amendments or additions.

11. Class II finish—A finish applied to hardboard panels that meets the specifications of American National Standard A135.5-2004, as approved by the American National Standards Institute in 2004, and hereby incorporated by reference in this rule, as published by the Composite Panel Association, 18922 Premiere Court, Gaithersburg, MD 20879-1574. This rule does not incorporate any subsequent amendments or additions.

12. Cleaning material—A solvent used to remove contaminants and other materials, such as dirt, grease, oil, and dried (e.g., depainting) or wet coating from a substrate before or after coating application or from equipment associated with a coating operation, such as spray booths, spray guns, racks, tanks, and hangers. Thus, it includes any cleaning materials used on substrates or equipment or both.

13. Cleaning operations—Processes of cleaning products, product components, tools, equipment, or general work areas during production, repair, maintenance, or servicing, including, but not limited to, spray gun cleaning, spray booth cleaning, large and small manufactured component cleaning, parts cleaning, equipment cleaning, line cleaning, floor cleaning, and tank cleaning, at affected facilities.

14. Cleanup solvent—A VOC-containing material used in cleaning operations.

15. Clear coat—A coating which lacks color and opacity or is transparent and uses the undercoat as a reflectant base or undertone color. This term also includes corrosion preventative coatings used for the interior of drums or pails.

16. Coating—A protective, decorative, or functional material applied in a thin layer to a surface. Such materials include, but are not limited to, paints, topcoats, varnishes, sealers, stains, washcoats, basecoats, inks, and temporary protective coatings.

17. Coating line purging—The process of flushing paint out and cleaning the spray lines when changing colors or to remove undesired material. It includes use of air and solvents to clean the lines.

18. Coating solids (or solids)—The part of the coating that remains after the coating is dried or cured; solids content is determined using data from Method 24 of Appendix A-7 to 40 CFR 60 as specified in 10 CSR 10-6.030(22).

19. Coating solids deposited—The coating solids which remain on the substrate or object being painted.

20. Contact adhesive—A contact adhesive does not include rubber cements that are primarily intended for use on paper substrates. Contact adhesive also does not include vulcanizing fluids that are designed and labeled for tire repair only. A contact adhesive is an adhesive that:

A. Is designed for application to both surfaces to be bonded together;

B. Is allowed to dry before the two (2) surfaces are placed in contact with each other;

C. Forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other; and

D. Does not need sustained pressure or clamping of surfaces after the adhesive-coated surfaces have been brought together using sufficient momentary pressure to establish full contact between both surfaces.

21. Control device—Any equipment that reduces the quantity of a pollutant that is emitted to the air. The device may destroy or secure the pollutant for subsequent recovery.

22. Control device efficiency—The ratio of the pollution released by a control device and the pollution introduced to the control device, expressed as a fraction.

23. Control system—The combination of capture and control devices used to reduce emissions to the atmosphere.

24. Cove base—A flooring trim unit, generally made of vinyl or rubber, having a concave radius on one (1) edge and a convex radius on the opposite edge that is used in forming a junction between the bottom wall course and the floor or to form an inside corner.

25. Cove base installation adhesive—An adhesive intended by the manufacturer to be used for the installation of cove base or wall base on a wall or vertical surface at floor level.

26. Cyanoacrylate adhesive—An adhesive with a cyanoacrylate content of at least ninety-five percent (95%) by weight.

(D) All terms beginning with D.

1. Deadener—A coating applied to selected vehicle surfaces primarily for the purpose of reducing the sound of road noise in the passenger compartment.

2. Dip coating—A method of applying coatings in which the part is sub- merged in a tank filled with the coatings.

3. Drum—Any cylindrical container of thirteen to one hundred ten (13-110)-gallon capacity.

(E) All terms beginning with E.

1. Electric dissipating coating—A coating that rapidly dissipates a high-voltage electric charge.

2. Electric-insulating and thermal-conducting coating—A coating that displays an electrical insulation of at least one thousand (1,000) volts DC per mil on a flat test plate and an average thermal conductivity of at least twenty-seven hundredths British thermal units (0.27 Btu) per hour-foot-degree-Fahrenheit.

3. Electric-insulating varnish—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.

4. Electrodeposition primer (EDP)—A protective, corrosion-resistant waterborne primer on exterior and interior surfaces that provides thorough coverage of recessed areas. It is a dip coating method that uses an electrical field to apply or deposit the conductive coating onto the part. The object being painted acts as an electrode that is oppositely charged from the particles of paint in the dip tank.

5. Electromagnetic interference/radio frequency interference (EMI/RFI) shielding—A coating used on electrical or electronic equipment to provide shielding against electromagnetic interference (EMI), radio frequency interference (RFI), or static discharge.

6. Electrostatic spray application—A spray application method that uses an electrical potential to increase the transfer efficiency of the coatings.

7. Electrostatic preparation coat—A coating that is applied to a plastic part solely to provide conductivity for the subsequent application of a prime, topcoat, or other coating through the use of

electrostatic application methods. An electrostatic preparation coat is clearly identified as an electrostatic preparation coat on its material safety data sheet.

8. Enamel—A coating which cures by chemical cross-linking of its base resin and is not resoluble in its original solvent

9. End sealing compound—A coating applied to the perimeter of can ends that functions as a gasket when the end is assembled on the can.

10. Etching filler—A coating for metal that contains less than twenty-three percent (23%) solids by weight and at least one-half percent (0.5%) acid by weight, and is used instead of applying a pretreatment coating followed by a primer.

11. Extreme high-gloss coating—A coating applied to—

A. Pleasure craft which, when tested according to ASTM D523 - 14, as specified in 10 CSR 10-6.040, shows a reflectance of ninety percent (90%) or more on a sixty degree (60°) meter; or

B. Metal and plastic parts that are not components of pleasure craft, which, when tested according to ASTM D523 – 14, as specified in 10 CSR 10-6.040, shows a reflectance of seventy-five percent (75%) or more on a sixty degree (60°) meter.

12. Extreme-performance coating—A coating used on a metal or plastic surface where the coated surface is, in its intended use, subject to the following:

A. Chronic exposure to corrosive, caustic, or acidic agents, chemicals, chemical fumes, chemical mixtures, or solutions;

B. Repeated exposure to temperatures in excess of two hundred fifty degrees Fahrenheit (250°F); or

C. Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers, or scouring agents.

(F) All terms beginning with F.

1. Fabric coating—A coating applied to a textile substrate by dipping or by means of a blade or roll.

2. Facility—All contiguous or adjoining property that is under common ownership or control, including properties that are separated

only by a road or other public right-of-way.

3. Facility maintenance operations—The routine repair or renovation (including the surface coating) of the tools, equipment, machinery, and structures that comprise the infrastructure of the affected facility and that are necessary for the facility to function in its intended capacity.

4. Final repair—The operations performed and coating(s) applied to completely-assembled motor vehicles or to parts that are not yet on a completely assembled vehicle to correct damage or imperfections in the coating.

5. Finish primer/surfacer—A coating applied to pleasure craft with a wet film thickness of less than ten (10) mils prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier, or promotion of a uniform surface necessary for filling in surface imperfections.

6. Flash-off area— Flash-off area means the portion of a coating process between the coating application station and the next coating application station or drying oven where solvent begins to evaporate from the coated substrate.

7. Flat wood paneling coating—Wood paneling products that are any interior, exterior, or tileboard (class I hardboard) panel to which a protective, decorative, or functional material or layer has been applied.

8. Flexible primer—A coating that is required to comply with engineering specifications for impact resistance, mandrel bend, or elongation as defined by the original equipment manufacturer.

9. Flexible vinyl—Non-rigid polyvinyl chloride plastic with at least five percent (5%) by weight plasticizer content.

10. Floor covering installation adhesive, indoor—An adhesive intended by the manufacturer for use in the installation of wood flooring, carpet, resilient tile, vinyl tile, vinyl-backed carpet, resilient sheet, and roll or artificial grass. Adhesives used to install ceramic tile and perimeter bonded sheet flooring with vinyl backing onto a nonporous substrate, such as flexible vinyl, are excluded from this category.

11. Floor covering installation adhesive, outdoor—Any adhesive intended by the manufacturer for use in the installation of floor covering that is not in an enclosure and that is exposed to ambient

weather conditions during normal use.

12. Flow coating—A method of applying coatings in which the part is carried through a chamber containing numerous nozzles which direct unatomized streams of coatings from many different angles onto the surface of the part.

13. Flush cleaning—The removal of contaminants such as dirt, grease, and coatings from a vehicle, component, or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item cleaned and then drained, or be assisted by air, compressed gas, hydraulic pressure, or by pumping. Spray gun cleaning or hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand actions are used are not included in this definition.

14. Fog coat—A coating that is applied to a plastic part for the purpose of color matching without masking a molded-in texture.

(G) All terms beginning with G.

1. Gasket/gasket-sealing material—A fluid applied to coat a gasket or replace and perform the same function as a gasket. Automobile and light-duty truck gasket/gasket-sealing material includes room temperature vulcanization seal material.

2. Glass-bonding primer—A primer applied to windshield or other glass, or to body openings, to prepare the glass or body opening for the application of glass-bonding adhesives or the installation of adhesive-bonded glass. Glass-bonding primer includes glass-bonding/cleaning primers that perform both functions (cleaning and priming of the windshield or other glass, or body openings) prior to the application of adhesive or the installation of adhesive-bonded glass.

3. Gloss reducer—A coating that is applied to a plastic part solely to reduce the shine of the part.

(H) All terms beginning with H.

1. Hardboard—A panel manufactured primarily from interfelted lingo-cellulosic fibers which are consolidated under heat and pressure in a hot press.

2. Hardwood plywood—Plywood whose surface layer is a veneer of hardwood.

3. Heat-resistant coating—A coating that must withstand a

temperature of at least four hundred degrees Fahrenheit (400°F) during normal use.

4. Heavy-duty vehicle (HDV)—Any motor vehicle rated at more than eight thousand five hundred pounds (8,500 lbs) gross vehicle weight rating.

5. High-bake coating—A coating which is designed to cure only at temperatures of more than one hundred ninety-four degrees Fahrenheit (194 °F).

6. High-build primer/surfacer—A coating applied to pleasure craft with a wet film thickness of ten (10) mils or more prior to the application of a topcoat for purposes of providing a moisture barrier, corrosion resistance, adhesion of subsequent coatings, or promoting a uniform surface necessary for filling in surface imperfections.

7. High-gloss coating—A coating applied to pleasure craft which, when tested by ASTM D523 – 14, as specified in 10 CSR 10-6.040, shows a reflectance of eighty-five percent (85%) or more on a sixty-degree (60°) meter.

8. High-performance architectural coating—A coating used to protect architectural subsections and which meets the requirements of the Architectural Aluminum Manufacturer Association's publication number AAMA 2604-05, Voluntary Specification, Performance Requirements, and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels or AAMA 2605-05, Voluntary Specification, Performance Requirements, and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels, as published July of 2005, and hereby incorporated by reference, as published by the American Architectural Manufacturers Association, 1827 Walden Office Square, Suite 550, Schaumburg, IL 60173. This rule does not incorporate any subsequent amendments or additions.

9. High-temperature coating—A coating that is certified to withstand a temperature of one thousand degrees Fahrenheit (1,000 °F) for twenty-four (24) hours.

10. High-volume low-pressure (HVLP) spray equipment—Spray equipment that is used to apply coating by means of spray gun that operates at ten pounds per square inch gauge (10.0 psig) of atomizing air pressure or less at the air cap.

(I) All terms beginning with I.

1. Industrial surface coating operation—The surface coating of manufactured items intended for distribution in commerce to persons other than the person or legal entity performing the surface coating.

2. Ink jet technology—A printing method in which an electronic output device transfers variable data, in the form of a digital image, from a computer to a variety of substrates.

3. Interior body spray—A coating sprayed on the interior surface of a can body to provide a protective film between the product and the can.

(J) All terms beginning with J.

(K) All terms beginning with K.

(L) All terms beginning with L.

1. Laminate—A product made by bonding together two(2) or more layers of material.

2. Light-duty truck—Vans, sport utility vehicles, and motor vehicles designed primarily to transport light loads of property with gross vehicle weight rating of eight thousand five hundred (8,500 lbs.) or less.

3. Low-bake coating—A coating designed to cure at temperatures below one hundred ninety-four degrees Fahrenheit (194 °F).

4. Lubricating wax/compound—A protective lubricating material applied to vehicle hubs and hinges.

(M) All terms beginning with M.

1. Magnetic data storage disk coating—A coating used on a metal disk which stores data magnetically.

2. Material safety data sheet (MSDS)—The chemical, physical, technical, and safety information document supplied by the manufacturer of the coating, solvent, or other chemical product.

3. Medical device or equipment—An instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent, or other similar article, including any component or accessory that meets one (1) of the following conditions:

A. It is intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or

prevention of disease;

B. It is intended to affect the structure or any function of the body; or

C. It is defined in the National Formulary or the United States Pharmacopoeia, or any supplement to them.

4. Metal to urethane/rubber molding or casting adhesive—Any adhesive intended by the manufacturer to bond metal to high density or elastomeric urethane or molded rubber materials to fabricate products such as rollers for computer printers or other paper handling equipment.

5. Metallic coating—A coating which contains more than five (5) grams of metal particles per liter of coating as-applied. Metal particles are pieces of a pure elemental metal or a combination of elemental metals.

6. Military specification coating—A coating which has a formulation approved by a United States Military Agency for use on military equipment.

7. Mold seal coating—The initial coating applied to a new mold or a repaired mold to provide a smooth surface which, when coated with a mold-release coating, prevents products from sticking to the mold.

8. Motor vehicle—Any self-propelled vehicle.

9. Motor vehicle coatings—Coatings applied to motor vehicles and motor vehicle parts at facilities that are not automobile or light-duty truck assembly coating facilities.

10. Motor vehicle refinishing—The process of coating motor vehicles, or their parts, that is subsequent to the original coating applied at an original equipment manufacturing plant.

11. 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.

12. Multi-component coating—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.

13. Multipurpose construction adhesive—Any adhesive intended by the manufacturer for use in the installation or repair of various

construction materials, including but not limited to drywall, subfloor, panel, fiberglass reinforced plastic (FRP), ceiling tile and acoustical tile.

(N) All terms beginning with N.

1. Natural finish hardwood plywood panel—A panel whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.

(O) All terms beginning with O.

1. One-component coating—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.

2. Optical coating—A coating applied to an optical lens.

3. Overvarnish—A can coating applied to reduce the coefficient of friction (to allow for proper mobility of the can on conveyor tracks), provide gloss, and protect the finish against abrasion and corrosion.

(P) All terms beginning with P.

1. Paint—A pigmented surface coating using volatile organic compounds as the major solvent and thinner which converts to a relatively opaque solid film after application as a thin layer.

2. Pan-backing coating—A coating applied to the surfaces of pots, pans, or other cooking implements that are exposed directly to a flame or other heating elements.

3. Paper, film, and foil coating operation—A web coating line that applies a continuous layer of coating material across essentially the entire width or any portion of the width of a web substrate to—

A. Provide a covering, finish, or functional or protective layer to a substrate;

B. Saturate a substrate for lamination; or

C. Provide adhesion between two (2) substrates for lamination.

4. Perimeter bonded sheet flooring installation—The installation

of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive designed to be applied only to a strip of up to four inches (4") wide around the perimeter of the sheet flooring.

5. Plastic—A synthetic material chemically formed by the polymerization of organic substances and capable of being molded, extruded, cast into various shapes and films, or drawn into filaments.

6. Plastic solvent welding adhesive—Any adhesive intended by the manufacturer for use to dissolve the surface of plastic to form a bond between mating surfaces.

7. Plastic solvent welding adhesive primer—Any primer intended by the manufacturer for use to prepare plastic substrates prior to bonding or welding.

8. Pleasure craft—A marine vessel which is manufactured or operated primarily for recreational purposes or leased, rented, or chartered to a person or business for recreational purposes.

9. Pleasure craft coating—A marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, roller, or other means to a pleasure craft.

10. Polyvinyl chloride plastic or PVC plastic—A polymer of the chlorinated vinyl monomer that contains 57% chlorine.

11. Porous material—A substance that has tiny openings, often microscopic, in which fluids may be absorbed or discharged, including, but not limited to, paper and corrugated paperboard. For the purposes of this rule, porous material does not include wood.

12. Powder coating—Any surface coating which is applied as a dry powder and is fused into a continuous coating film with heat.

13. Prefabricated architectural component coating—A coating applied to metal parts and products which are to be used as an architectural structure.

14. Pressure sensitive tape and label coating operation—Any number or combination of adhesive, release, or precoat coating applicators, flash-off areas, and ovens which coat a continuous web, located between a web unwind station and a web rewind station, to produce pressure sensitive tape and label materials.

15. Pretreatment coating—A coating which contains no more than twelve percent (12%) solids by weight, but at least one-half percent

(0.5%) acids by weight, is used to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

16. Pretreatment wash primer—A coating which contains no more than twenty-five percent (25%) solids by weight, but at least one-tenth of a percent (0.1%) acids by weight, is used to provide surface etching, and is applied directly to fiberglass and metal surfaces to provide corrosion resistance and adhesion of subsequent coatings.

17. Primer—The first layer and any subsequent layers of identically formulated coating applied to the article to provide corrosion resistance, surface etching, surface leveling, adhesion promotion, or other property depending on the end use or exposure of the final product. Primers that are defined as specialty coatings are not included under this definition.

18. Primer-surfacer—An intermediate protective coating applied over the electrodeposition primer and under the topcoat at an automobile or light-duty truck assembly coating facility. Primer-surfacer provides adhesion, protection, and appearance properties to the total finish. Primer-surfacer may also be called guide coat or surfacer.

19. 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.

(Q) All terms beginning with Q.

(R) All terms beginning with R.

1. Reinforced plastic composite—A composite material consisting of plastic reinforced with fibers.

2. Related cleaning activity—The removal of coating residue or other unwanted materials from equipment related to coating operations as well as the cleaning of spray guns, transfer line, tanks, and the interior of spray booths.

3. Repair coating—A coating used to re-coat portions of a previously coated product which has sustained mechanical damage to the coating following normal coating operations.

4. Roller coating—The application of a coating to a substrate by means of hard rubber or metal rolls.

5. Rubber—Any natural or manmade rubber substrate, including,

but not limited to, styrene-butadiene rubber, polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene, and ethylene propylene diene terpolymer.

(S) All terms beginning with S.

1. Safety-indicating coating—A coating which changes physical characteristics, such as color, to indicate unsafe conditions.

2. Sealer—A high viscosity material, generally, but not always, applied in the paint shop after the body has received an electrodeposition primer coating and before the application of subsequent coatings (e.g., primer-surfacer). The primary purpose of sealer is to fill body joints completely so that there is no intrusion of water, gases or corrosive materials into the passenger area of the body compartment. Such materials are also referred to as sealant, sealant primer, or caulk.

3. Sealant—Any material with adhesive properties that is formulated primarily to fill, seal, waterproof or weatherproof gaps or joints between two (2) surfaces. Sealants include sealant primers and caulks.

4. Sheet basecoat—A coating applied to either side of flat metal sheets before they are formed into three-piece cans and can ends to protect the interior surface or provide an exterior background coating.

5. Sheet rubber lining installation—The process of applying sheet rubber liners by hand to metal or plastic substrates to protect the underlying substrate from corrosion or abrasion. These operations also include laminating sheet rubber to fabric by hand.

6. Shock-free coating—A coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being of low capacitance and high resistance and having resistance to breaking down under high voltage.

7. Side-seam spray—A coating applied to the interior and/or exterior of the welded or soldered seam of a three (3)-piece can body to protect the exposed metal.

8. Single-ply roof membrane—A prefabricated single sheet of rubber, normally ethylene-propylenediene terpolymer, that is field applied to a building roof using one (1) layer of membrane material. For the purposes of this rule, single-ply roof membrane does not include membranes prefabricated from ethylene-propylenediene monomer (EPDM).

9. Single-ply roof membrane adhesive primer—A primer labeled for use to clean and promote adhesion of the single-ply roof membrane seams or splices prior to bonding.

10. Single-ply roof membrane installation/repair adhesive—An adhesive labeled for use in the installation or repair of single-ply roof membrane. Installation includes, as a minimum, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane. Repair includes gluing the edges of torn membrane together, attaching a patch over a hole, and reapplying flashings to vents, pipes, or ducts installed through the membrane.

11. Solar-absorbent coating—A coating which has as its prime purpose the absorption of solar radiation.

12. Solid film lubricant—A very thin coating consisting of a binder system containing as its chief pigment material one (1) or more of the following:

A. Molybdenum;

B. Graphite;

C. Polytetrafluoroethylene (PTFE); and

D. Other solids that act as a dry lubricant between closely or tightly fitting surfaces.

13. Solvent—Organic materials which are liquid at standard conditions and which are used as dissolvers, viscosity reducers, or cleaning agents.

14. Specialty coating—A coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, anti-reflection, temporary protection, or marking, sealing, adhesively joining substrates, or enhanced corrosion protection.

15. Stencil coating—An ink or a pigmented coating which is rolled or brushed onto a template or stamp to add identifying letters, symbols, and/or numbers.

16. Structural glazing—A process that includes the application

of adhesive to bond glass, ceramic, metal, stone, or composite panels to exterior building frames.

17. Surface coating unit—One (1) or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary for a coating unit to have an oven or flash-off area.

(T) All terms beginning with T.

1. Texture coating—A coating that is applied to a plastic part which, in its finished form, consists of discrete raised spots of the coating.

2. Thin metal laminating adhesive—An adhesive intended by the manufacturer for use in bonding multiple layers of metal to metal or metal to plastic in the production of electronic or magnetic components in which the thickness of the bond line(s) is less than 0.25 millimeters.

3. Thinner— An organic solvent that is added to a coating after the coating is received from the supplier.

4. Thin particleboard—A manufactured board 0.64 centimeters (1/4 inch) or less in thickness made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure.

5. Tileboard—A premium interior wall paneling product made of hardboard that is used in high-moisture areas of the home, such as kitchens and bathrooms, and meets the specifications for Class I hardboards as approved by the American National Standards Institute.

6. Tire repair—A process that includes expanding a hole, tear, fissure, or blemish in a tire casing by grinding or gouging, applying adhesive, and filling the hole or crevice with rubber.

7. Topcoat—The final coating or coating system in which one (1) or more coats are applied for the purposes of appearance or protection of the substrate. Nonpermanent final finishes are not topcoats.

8. Touch-up coating—A coating used to cover minor coating imperfections appearing after the main coating operation.

9. Transfer efficiency—Ratio of the amount of coating solids

transferred onto a product to the total of coating solids used. In any surface coating operation, TE is the ratio of solids in a coating that adhere on a target surface to the total solids used in the process for coating the target surface.

10. Translucent coating—A coating which contains binders and pigment, and is formulated to form a colored, but not opaque, film.

11. Trunk interior coating—A coating applied to the trunk interior to provide chip protection.

12. Two (2)-component coating—A coating requiring the addition of a separate reactive resin, commonly known as a catalyst, before application to form an acceptable dry film.

13. Two (2)-piece can exterior coating— A coating applied to the exterior surface of a two (2)-piece can to protect the metal surface or provide a background for lithograph or printing operations.

14. Two (2)-piece can exterior end coating—A coating applied to the exterior surface of a two (2)-piece can end.

(U) All terms beginning with U.

1. Underbody coating—A coating applied to the undercarriage or firewall to prevent corrosion and/or provide chip protection.

2. Undersea-based weapons systems components—The fabrication of parts, assembly of parts or completed units of any portion of a missile launching system used on undersea ships.

(V) All terms beginning with V.

1. Vacuum-metalizing coating—The undercoat applied to the substrate on which the metal is deposited or the overcoat applied directly to the metal film. Vacuum metalizing/physical vapor deposition (PVD) is the process whereby metal is vaporized and deposited on a substrate in a vacuum chamber.

2. Vinyl coating—A functional, decorative, or protective topcoat or printing applied to vinyl-coated fabric or vinyl sheets.

3. Volatile organic compound (VOC)— See definition in 10 CSR 10-6.020.

(W) All terms beginning with W.

1. Waterproof resorcinol glue—A two (2)-part resorcinol-resin-

based adhesive designed for applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

2. Weatherstrip adhesive—An adhesive applied to weatherstripping materials to bond the weatherstrip material to the surface of the vehicle.

3. Web coating line—Any number of work stations, of which one (1) or more applies a continuous layer of coating material across the entire width or any portion of the width of a web substrate, and any associated curing/drying equipment between an unwind or feed station and a rewind or cutting station.

(X) All terms beginning with X.

(Y) All terms beginning with Y.

(Z) All terms beginning with Z.

(3) General Provisions. General provisions for specific coatings may be found in the following subsections of section (3) of this rule:

Coating	**Subsection**
Large Appliance Coatings	(3)(A)
Metal Furniture Coatings	(3)(B)
Automobile and Light-Duty Truck Assembly Coatings	(3)(C)
Paper, Film, and Foil Coatings	(3)(D)
Magnet Wire Coatings	(3)(E)
Coil Coatings	(3)(F)
Can Coatings	(3)(G)
Vinyl and Fabric Coatings	(3)(H)
Flat Wood Paneling Coatings	(3)(I)
Miscellaneous Metal and Plastic Parts Coatings	(3)(J)
Industrial Adhesive Application	(3)(K)

(A) Large Appliance Coatings.

1. The requirements in this subsection apply to the surface coating of doors, cases, lids, panels, and interior support parts of the following residential and commercial products:

A. Washers;

B. Dryers;

C. Ranges;

D. Refrigerators;

E. Freezers;

F. Water heaters;

G. Dishwashers;

H. Trash compactors;

I. Air conditioners; and

J. Other similar products.

2. Emission limits. No owner or operator of a surface coating unit subject to this subsection may cause, allow, or permit the discharge into the ambient air of any VOCs in excess of the following, as delivered to the coating applicator(s):

Large Appliance Coatings		
	Emission Limit pounds of VOC per gallon of coating (minus water and exempt compounds)	
Coating Category	Baked Coating	Air-Dried Coating
General		
One (1)-Component Coating	2.3	2.3
Multi-Component Coating	2.3	2.8
Extreme High-Gloss Coating	3.0	2.8
Extreme-Performance Coating	3.0	3.5
Heat-Resistant Coating	3.0	3.5
Metallic Coating	3.5	3.5
Pretreatment Coatings	3.5	3.5
Solar-Absorbent Coating	3.0	3.5
Repair and Touch-Up Coating	6.5	6.5

3. Method and determination of compliance. The emission limits in paragraph (3)(A)2. of this rule shall be achieved through one (1) of the following:

A. VOC content of coatings. Determine the daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds) per subparagraph (5)(C)3.A. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limits in paragraph (3)(A)2. of this rule;

B. Combination of VOC content of coatings and add-on controls. Calculate the required control system efficiency per paragraph (5)(C)4. of this rule. The surface coating unit is in compliance if the actual overall control system efficiency is greater than or equal to the required control system efficiency; or

C. Control system. If a control system is used to achieve compliance, the overall control system efficiency must be ninety percent (90%) or greater.

4. Application equipment. One (1) or a combination of the following equipment shall be used for coating application, unless achieving compliance by using an add-on control system per subparagraph (3)(A)3.C. of this rule:

A. Electrostatic spray application;

B. High-volume low-pressure (HVLP) spray equipment;

C. Flow coating;

D. Roller coating;

E. Dip coating, including electrodeposition;

F. Airless spray;

G. Air-assisted airless spray;

H. Ink jet technology; and

I. Other coating application method capable of achieving a transfer efficiency equivalent or better than achieved by HVLP spraying.

5. Work practices. Work practices shall be used to minimize VOC emissions from solvent storage, mixing operations, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices include, but are not limited to, the following:

A. Store all VOC-containing coatings, thinners, and

cleaning materials in closed containers;

B. Ensure that mixing and storage containers used for VOC-containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials;

C. Minimize spills of VOC-containing coatings, thinners, and cleaning materials;

D. Clean up spills immediately;

E. Convey any coatings, thinners, and cleaning materials in closed containers or pipes from one (1) location to another; and

F. Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

6. The VOC limits in paragraph (3)(A)2. of this rule do not apply to the following types of coatings and coating operations:

A. Stencil coatings;

B. Safety-indicating coatings;

C. Solid film lubricants; or

D. Electric-insulating and thermal-conducting coatings.

(B) Metal Furniture Coatings.

1. The requirements in this subsection apply to surface coating of any furniture made of metal or any metal part that will be assembled with other metal, wood, fabric, plastic, or glass parts to form a furniture piece.

2. Emission limits. No owner or operator of a surface coating unit subject to this subsection may cause, allow, or permit the discharge into the ambient air of any VOCs in excess of the following, as delivered to the coating applicator(s):

Metal Furniture Coatings	
Coating Category	Emission Limit pounds of VOC per gallon of coating

	(minus water and exempt compounds)	
	Baked Coating	Air-Dried Coating
General		
One (1)-Component Coating	2.3	2.3
Multi-Component Coating	2.3	2.8
Extreme High-Gloss Coating	3.0	2.8
Extreme-Performance Coating	3.0	3.5
Heat-Resistant Coating	3.0	3.5
Metallic Coating	3.5	3.5
Pretreatment Coatings	3.5	3.5
Solar-Absorbent Coating	3.0	3.5

3. Method and determination of compliance. The emission limits in paragraph (3)(B)2. of this rule shall be achieved through one (1) of the following:

A. VOC content of coatings. Determine the daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds) per subparagraph (5)(C)3.A. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limits in paragraph (3)(B)2. of this rule;

B. Combination of VOC content of coatings and add-on controls. Calculate the required control system efficiency per paragraph (5)(C)4. of this rule. The surface coating unit is in compliance if the actual overall control system efficiency is greater than or equal to the required control system efficiency; or

C. Control system. If a control system is used to achieve compliance, the overall control system efficiency must be ninety percent (90%) or greater.

4. Application equipment. One (1) or a combination of the following equipment shall be used for coating application, unless achieving compliance by using an add-on control system per subparagraph (3)(B)3.C. of this rule:

A. Electrostatic spray application;

B. HVLP spray equipment;

C. Flow coating;

D. Roller coating;

E. Dip coating, including electrodeposition;

F. Airless spray;

G. Air-assisted airless spray;

H. Ink jet technology; and

I. Other coating application method capable of achieving a transfer efficiency equivalent or better than achieved by HVLP spraying.

5. Work practices. Work practices shall be used to minimize VOC emissions from solvent storage, mixing operations, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices include, but are not limited to, the following:

A. Store all VOC-containing coatings, thinners, and cleaning materials in closed containers;

B. Ensure that mixing and storage containers used for VOC-containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials;

C. Minimize spills of VOC-containing coatings, thinners, and cleaning materials;

D. Clean up spills immediately;

E. Convey any coatings, thinners, and cleaning materials in closed containers or pipes from one (1) location to another; and

F. Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

6. The VOC limits in paragraph (3)(B)2. of this rule do not apply to the following types of coatings and coating operations:

A. Stencil coatings;

B. Safety-indicating coatings;

C. Solid film lubricants; and

D. Electric-insulating and thermal-conducting coatings.

(C) Automobile and Light-Duty Truck Assembly Coatings.

1. The requirements in this subsection apply to automobile and light-duty truck surface coating operations performed in an automobile or light-duty truck assembly plant.

2. Emission limits. No owner or operator of an automobile or light-duty truck assembly plant may cause, allow, or permit the discharge into the ambient air any VOC in excess of the following:

Automobile and Light-Duty Truck Assembly Coatings			
Coating Category	Emission Limit		
	$R_T < 0.040$	$0.040 \leq R_T < 0.160$	$R_T \geq 0.160$
Electrodeposition primer (EDP)	No VOC Emission Limit	$0.7 \times 350^{\,0.160-RT}$ pounds of VOC per gallon of coating solids deposited	0.7 pounds of VOC per gallon of coating solids deposited
Primer-surfacer	12.0 pounds of VOC per gallon of coating solids deposited		
Topcoat	12.0 pounds of VOC per gallon of coating solids deposited		
Combined Primer-Surfacer and Topcoat	12.0 pounds of VOC per gallon of coating solids deposited		
Final repair	4.8 pounds of VOC per gallon of coating (minus water and exempt compounds)		

Miscellaneous Automobile and Light-Duty Truck Materials	
Material	**Emission Limit pounds of VOC per gallon of coating (minus water and exempt compounds)**
Glass bonding primer	7.5
Adhesive	2.1
Cavity wax	5.4
Sealer	5.4
Deadener	5.4
Gasket/gasket-sealing material	1.7

Underbody coating	5.4
Trunk interior coating	5.4
Bedliner	1.7
Weatherstrip adhesive	6.3
Lubricating wax/compound	5.8

3. Method and determination of compliance. The emission limits in paragraph (3)(C)2. of this rule shall be achieved through the following:

A. Spray primer; primer-surfacer; topcoat; and combined primer-surfacer and topcoat. The VOC emission rate, expressed as pounds of VOC per gallon of coating solids deposited, is determined by the procedures in the *Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations* (EPA-453/R-08-002), dated September 2008, and hereby incorporated by reference, as published by the U.S. Environmental Protection Agency. Copies can be obtained from the U.S. Publishing Office Bookstore, 710 N. Capitol Street NW, Washington, DC 20401. This rule does not incorporate any subsequent amendments or additions. The surface coating unit is in compliance if the emission rate is less than or equal to the emission limit in paragraph (3)(C)2. of this rule;

B. Electrodeposition primer (EDP). Determine the monthly volume-weighted average VOC emission rate of the EDP coating unit, expressed as pounds of VOC per gallon of coating solids deposited, per subparagraph (5)(C)3.D. of this rule. The EDP coating unit is in compliance if this value is less than or equal to the emission limit in paragraph (3)(C)2. of this rule;

C. Final repair coatings. Determine the daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds) per subparagraph (5)(C)3.A. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limits in paragraph (3)(C)2. of this rule; and

D. All other coatings. Determine the monthly volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds) per subparagraph (5)(C)3.E. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limit in paragraph (3)(C)2. of this rule.

4. Work practices and work practice plan.

A. Work practices. Work practices shall be used to minimize VOC emissions from storage, mixing operations, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices include, but are not limited to, the following:

(I) Store all VOC-containing coatings, thinners, and cleaning materials in closed containers;

(II) Ensure that mixing and storage containers used for VOC-containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials;

(III) Minimize spills of VOC-containing coatings, thinners, and cleaning materials;

(IV) Clean up spills immediately;

(V) Convey any coatings, thinners, and cleaning materials in closed containers or pipes from one (1) location to another; and

(VI) Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

B. Work practice plan. Owners and operators of facilities subject to subparagraph (3)(C)4.A. of this rule shall develop and implement a work practice plan to minimize VOC emissions from cleaning and purging of equipment associated with all coating operations for which emission limits are specified in paragraph (3)(C)2. of this rule. The plan shall specify practices and procedures to ensure that VOC emissions from the following operations are minimized:

(I) Vehicle body wiping;

(II) Coating line purging;

(III) Flush cleaning of coating systems;

(IV) Cleaning of spray booth grates;

(V) Cleaning of spray booth walls;

(VI) Cleaning of spray booth equipment;

(VII) Cleaning external spray booth areas; and

(VIII) Other housekeeping measures, such as keeping solvent-laden rags in closed containers.

(D) Paper, Film, and Foil Coatings.

1. The requirements in this subsection apply to paper, film, and foil coating operations, with the exception of the following:

A. Paper, film, and foil surface coating units with potential to emit below twenty-five (25) tons per year of VOC from coating, prior to controls;

B. Coating performed on or in-line with any offset lithographic, screen, letterpress, flexographic, rotogravure, or digital printing press that is part of a printing process; and

C. Size presses and on-machine coaters on papermaking machines that apply sizing or water-based clays.

2. Emission limits. No owner or operator of a surface coating unit subject to this subsection may cause, allow, or permit the discharge into the ambient air of any VOCs in excess of the following, as delivered to the coating applicator(s):

Paper, Film, and Foil Coatings	
Coating Category	**Emission Limit pounds of VOC per pound of coating solids**
Pressure sensitive tape and label coating operation	0.2
Paper, film, and foil coating (not including pressure sensitive tape and label coating operations)	0.4

3. Method and determination of compliance. The emission limits in paragraph (3)(D)2. of this rule shall be achieved through one (1) of the following:

A. VOC content of coatings. Determine the daily mass-weighted average VOC content of all coating used in a surface coating unit, expressed as pounds of VOC per pound of coating solids per paragraph (5)(C)3.C. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limits in paragraph (3)(D)2. of this rule; or

B. Control system. If a control system is used to achieve compliance, the overall control system efficiency must be ninety percent (90%) or greater.

4. Work practices. Work practices shall be used to minimize VOC emissions from solvent storage, mixing operations, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices include, but are not limited to, the following:

A. Store all VOC-containing coatings, thinners, and cleaning materials in closed containers;

B. Ensure that mixing and storage containers used for VOC-containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials;

C. Minimize spills of VOC-containing coatings, thinners, and cleaning materials;

D. Clean up spills immediately;

E. Convey any coatings, thinners, and cleaning materials in closed containers or pipes from one (1) location to another; and

F. Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

(E) Magnet Wire Coatings.

1. The requirements in this subsection apply to the coating of electric-insulating varnish or enamel to aluminum or copper wire for use in electrical machinery.

2. Emission limits. No owner or operator of a surface coating unit subject to this subsection may cause, allow, or permit the discharge into the ambient air of any VOCs in excess of one and seven-tenths (1.7) pounds of VOC per gallon of coating (minus water and exempt compounds) as delivered to the coating applicator(s).

3. Method and determination of compliance. The emission limits in paragraph (3)(E)2. of this rule shall be achieved through one (1) of the following:

A. VOC content of coatings. Determine the daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds), per subparagraph (5)(C)3.A. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limit in paragraph (3)(E)2. of this rule;

B. Combination of VOC content of coatings and add-on controls. Calculate the required control system efficiency per paragraph (5)(C)4. of this rule. The surface coating unit is in compliance if the actual overall control system efficiency is greater than or equal to the required control system efficiency; or

C. Control system. If a control system is used to achieve compliance, the overall control system efficiency must be ninety percent (90%) or greater.

(F) Coil Coatings.

1. The requirements in this subsection apply to the surface coating of any flat metal sheet or strip that comes in rolls or coils.

2. Emission limits. No owner or operator of a surface coating unit subject to this subsection may cause, allow, or permit the discharge into the ambient air of any VOCs in excess of two and six-tenths (2.6) pounds of VOC per gallon of coating (minus water and exempt compounds) as delivered to the coating applicator(s).

3. Method and determination of compliance. The emission limits in paragraph (3)(F)2. of this rule shall be achieved through one (1) of the following:

A. VOC content of coatings. Determine the daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds), per subparagraph (5)(C)3.A. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limit in paragraph (3)(F)2. of this rule;

B. Combination of VOC content of coatings and add-on controls. Calculate the required control system efficiency per paragraph (5)(C)4. of this rule. The surface coating unit is in compliance if the actual overall control system efficiency is greater

than or equal to the required control system efficiency; or

C. Control system. If a control system is used to achieve compliance, the overall control system efficiency must be ninety percent (90%) or greater.

(G) Can Coatings.

1. The requirements in this subsection apply to the surface coating of cans.

2. Emission limits. No owner or operator of a surface coating unit subject to this subsection may cause, allow, or permit the discharge into the ambient air of any volatile organic compounds, as delivered to the coating applicator(s), in excess of the following:

Can Coatings	
Coating Category	Emission Limit pounds of VOC per gallon of coating (minus water and exempt compounds)
Sheet Basecoat	2.8
Overvarnish	2.8
Two (2)-Piece Can Exterior Coating	2.8
Interior Body Spray	4.2
Two (2)-Piece Can Exterior End Coating	4.2
Side-Seam Spray	5.5
End Sealing Compound	3.7

3. Method and determination of compliance. The emission limits in paragraph (3)(G)2. of this rule shall be achieved through one (1) of the following:

A. VOC content of coatings. Determine the daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds), per subparagraph (5)(C)3.A. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limit in paragraph (3)(G)2. of this rule;

B. Combination of VOC content of coatings and add-on controls. Calculate the required control system efficiency per paragraph (5)(C)4. of this rule. The surface coating unit is in compliance if the actual overall control system efficiency is greater

than or equal to the required control system efficiency; or

C. Control system. If a control system is used to achieve compliance, the overall control system efficiency must be ninety percent (90%) or greater.

(H) Vinyl and Fabric Coatings.

1. The requirements in this subsection apply to vinyl coating and fabric coating.

2. Emission limits. No owner or operator of a surface coating unit subject to this subsection may cause, allow, or permit the discharge into the ambient air of any VOCs, as delivered to the coating applicator(s), in excess of the following:

Vinyl and Fabric Coatings	
Coating Category	**Emission Limit pounds of VOC per gallon of coating (minus water and exempt compounds)**
Vinyl	3.8
Fabric	2.9

3. Method and determination of compliance. The emission limits in paragraph (3)(H)2. of this rule shall be achieved through one (1) of the following:

A. VOC content of coatings. Determine the daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds), per subparagraph (5)(C)3.A. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limit in paragraph (3)(H)2. of this rule;

B. Combination of VOC content of coatings and add-on controls. Calculate the required control system efficiency per paragraph (5)(C)4. of this rule. The surface coating unit is in compliance if the actual overall control system efficiency is greater than or equal to the required control system efficiency; or

C. Control system. If a control system is used to achieve compliance, the overall control system efficiency must be ninety percent (90%) or greater.

(I) Flat Wood Paneling Coatings.

1. The requirements in this subsection apply to the coating of the following:

A. Printed interior panels made of hardwood plywood and thin particle board;

B. Natural finish hardwood plywood panels;

C. Hardboard paneling with Class II finishes;

D. Exterior siding; and

E. Tileboard.

2. Emission limits. No owner or operator of a surface coating unit subject to this subsection may cause, allow, or permit the discharge into the ambient air of any VOCs in excess of two and one-tenths (2.1) pounds of VOC per gallon of coating (minus water and exempt compounds) as delivered to the coating applicator(s).

3. Method and determination of compliance. The emission limits in paragraph (3)(I)2. of this rule shall be achieved through one (1) of the following:

A. VOC content of coatings. Determine the daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds), per subparagraph (5)(C)3.A. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limit in paragraph (3)(I)2. of this rule;

B. Combination of VOC content of coatings and add-on controls. Calculate the required control system efficiency per paragraph (5)(C)4. of this rule. The surface coating unit is in compliance if the actual overall control system efficiency is greater than or equal to the required control system efficiency; or

C. Control system. If a control system is used to achieve compliance, the overall control system efficiency must be ninety percent (90%) or greater.

4. Work practices. Work practices shall be used to minimize VOC emissions from solvent storage, mixing operations, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices include, but are not limited to, the following:

A. Store all VOC-containing coatings, thinners, and cleaning materials in closed containers;

B. Ensure that mixing and storage containers used for VOC-containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials;

C. Minimize spills of VOC-containing coatings, thinners, and cleaning materials;

D. Clean up spills immediately;

E. Convey any coatings, thinners, and cleaning materials in closed containers or pipes from one (1) location to another; and

F. Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

(J) Miscellaneous Metal and Plastic Parts Coatings.

1. The requirements in this subsection apply to the surface coating of all other miscellaneous metal and plastic parts including, but not limited to, the following:

A. Large and small farm implements and machinery;

B. Railroad cars;

C. Small household appliances;

D. Office equipment;

E. Commercial and industrial machinery and equipment;

F. Any other industrial category that coats metal parts or products under the Standard Industrial Classification Code of major groups #33, #34, #35, #36, #37, #38, and #39;

G. Fabricated metal products;

H. Molded plastic parts;

I. Automotive or transportation equipment;

J. Interior or exterior automotive parts;

K. Construction equipment;

L. Motor vehicle accessories;

M. Bicycles and sporting goods;

N. Toys;

O. Recreational vehicles;

P. Pleasure craft (recreational boats);

Q. Extruded aluminum structural components;

R. Heavy-duty vehicles;

S. Lawn and garden equipment;

T. Business machines;

U. Laboratory and medical equipment;

V. Electronic equipment;

W. Steel drums;

X. Metal pipes; and

Y. Prefabricated architectural components when the coating is applied in a surface coating unit.

2. Emission limits. No owner or operator of a surface coating unit subject to this subsection may cause, allow, or permit the discharge into the ambient air of any VOCs in excess of the following, as delivered to the coating applicator(s):

Metal Parts and Products Coatings		
	Emission Limit pounds of VOC per gallon of coating (minus water and exempt compounds)	
Coating Category	**Air-Dried Coating**	**Baked Coating**
General		
One (1)-Component Coating	2.8	2.3
Multi-Component Coating	2.8	2.3
Camouflage Coating	3.5	3.5

Clear Coat	4.3	4.3
Electric-Insulating Varnish	3.5	3.5
Etching Filler	3.5	3.5
Extreme High-Gloss Coating	3.5	3.0
Extreme-Performance Coating	3.5	3.0
Heat-Resistant Coating	3.5	3.0
High-Performance Architectural Coating	6.2	6.2
High-Temperature Coating	3.5	3.5
Metallic Coating	3.5	3.5
Military Specification Coating	2.8	2.3
Mold Seal Coating	3.5	3.5
Pan-Backing Coating	3.5	3.5
Prefabricated Architectural Component Coating	3.5	2.3
Pretreatment Coatings	3.5	3.5
Repair and Touch-Up Coatings	3.5	3.0
Silicone-Release Coating	3.5	3.5
Solar-Absorbent Coating	3.5	3.0
Vacuum-Metalizing Coating	3.5	3.5
Drum, New, Exterior	2.8	2.8
Drum, New, Interior	3.5	3.5
Drum, Reconditioned, Exterior	3.5	3.5
Drum, Reconditioned, Interior	4.2	4.2

Plastic and Rubber Parts and Products Coatings	
Coating Category	**Emission Limit pounds of VOC per gallon of coating (minus water and exempt compounds)**
Automotive/Transportation	
High-Bake Coating Interior and Exterior Parts	
Flexible Primer	**4.5**
Non-Flexible Primer	**3.5**
Basecoat	**4.3**
Clear Coat	**4.0**
Non-Basecoat/Clear Coat	**4.3**
Low-Bake Coating/Air-Dried Coating, Exterior Parts	
Primer	**4.8**
Basecoat	**5.0**
Clear Coat	**4.5**
Non-Basecoat/Clear Coat	**5.0**
Low-Bake Coating/Air-Dried Coating,	**5.0**

Interior Parts	
Touch-Up and Repair Coatings	**5.2**
Business Machine	
Primer	**2.9**
Topcoat	**2.9**
Texture Coat	**2.9**
Fog Coat	**2.2**
Touch-Up and Repair Coatings	**2.9**
Plastic and Rubber, All Other	
General	
One (1)-Component Coating	**2.3**
Multi-Component Coating	**3.5**
Electric Dissipating Coating and Shock-Free Coating	**6.7**
Extreme-Performance Coating	**3.5**
Metallic Coating	**3.5**
Military Specification Coating	
One (1)-Component Coating	2.8
Two (2)-Component Coating	3.5
Mold Seal Coating	6.3
Multi-Colored Coating	5.7
Optical Coating	6.7
Polyurethane Shoe Sole	6.7
Vacuum-Metalizing Coating	6.7
Decorative Coating of Foam Products, Dip-Coated, Air-Dried	5.7

Pleasure Craft Coatings	
Coating Category	**Emission Limit pounds of VOC per gallon of coating (minus water and exempt compounds)**
Extreme High-Gloss Coating	5.0
High-Gloss Coating	3.5
Pretreatment Wash Primer	6.5
Finish Primer/Surfacer	5.0
High-Build Primer/Surfacer	2.8
Aluminum Substrate Antifoulant Coating	4.7
Other Substrate Antifoulant Coating	3.3
Antifoulant Sealer/Tie Coating	3.5
All Other Coatings	3.5

Motor Vehicle Coatings	
Coating Category	**Emission Limit**

	pounds of VOC per gallon of coating (minus water and exempt compounds)
Cavity Wax	5.4
Sealer	5.4
Deadener	5.4
Gasket/Gasket-Sealing Material	1.7
Underbody Coating	5.4
Trunk Interior Coating	5.4
Bedliner	1.7
Lubricating Wax/Compound	5.8

3. Method and determination of compliance. The emission limits in paragraph (3)(J)2. of this rule shall be achieved through one (1) of the following:

A. VOC content of coatings. Determine the daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds), per subparagraph (5)(C)3.A. of this rule. The surface coating unit is in compliance if this value is less than or equal to the emission limit in paragraph (3)(J)2. of this rule;

B. Combination of VOC content of coatings and add-on controls. Calculate the required control system efficiency per paragraph (5)(C)4. of this rule. The surface coating unit is in compliance if the actual overall control system efficiency is greater than or equal to the required control system efficiency; or

C. Control system. If a control system is used to achieve compliance, the overall control system efficiency must be ninety percent (90%) or greater.

4. Application equipment. One (1) or a combination of the following equipment shall be used for coating application, unless achieving compliance by using an add-on control device per subparagraph (3)(J)3.C. of this rule:

A. Electrostatic spray application;

B. HVLP spray equipment;

C. Flow coating;

D. Roller coating;

E. Dip coating, including electrodeposition;

F. Airless spray;

G. Air-assisted airless spray;

H. Ink jet technology; and

I. Other coating application method capable of achieving a transfer efficiency equivalent or better than achieved by HVLP spraying.

5. Work practices. Work practices shall be used to minimize VOC emissions from solvent storage, mixing operations, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices include, but are not limited to, the following:

A. Store all VOC-containing coatings, thinners, and cleaning materials in closed containers;

B. Ensure that mixing and storage containers used for VOC-containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials;

C. Minimize spills of VOC-containing coatings, thinners, and cleaning materials;

D. Clean up spills immediately;

E. Convey any coatings, thinners, and cleaning materials in closed containers or pipes from one (1) location to another; and

F. Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

6. For metal parts coatings, the VOC limits in paragraph (3)(J)2. of this rule do not apply to the following types of coatings and coating operations:

A. Stencil coatings;

B. Safety-indicating coatings;

C. Solid film lubricants;

D. Electric-insulating and thermal-conducting coatings;

E. Magnetic data storage disk coatings; and

F. Plastic extruded onto metal parts to form a coating.

7. For metal parts coatings, the application equipment requirements in paragraph (3)(J)4. of this rule do not apply to the following types of coatings and coating operations:

A. Touch-up coatings;

B. Repair coatings; and

C. Textured coatings.

8. For plastic parts coatings, the VOC limits in paragraph (3)(J)2. of this rule do not apply to the following types of coatings and coating operations:

A. Touch-up and repair coatings;

B. Stencil coatings applied on clear or transparent substrates;

C. Clear or translucent coatings;

D. Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings;

E. Any individual coating category used in volumes less than fifty (50) gallons in any one (1) year, if substitute compliant coatings are not available, provided that the total usage of all such coatings does not exceed two hundred (200) gallons per year, per facility;

F. Reflective coating applied to highway cones;

G. Mask coatings that are less than one-half (0.5) millimeter thick (dried) and the area coated is less than twenty-five (25) square inches;

H. Electromagnetic interference and radio frequency interference (EMI/RFI) shielding coatings; and

I. Heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices, provided that the total usage of all such

coatings does not exceed one hundred (100) gallons per year, per facility.

9. For plastic parts coatings, the application equipment requirements in paragraph (3)(J)4. of this rule do not apply to airbrush operations using five (5) gallons or less per year of coating.

10. For automobile, transportation, or business machine plastic parts coatings, the VOC limits in paragraph (3)(J)2. of this rule do not apply to the following types of coatings and coating operations:

A. Texture coatings;

B. Vacuum metalizing coatings;

C. Gloss reducers;

D. Texture adhesion primers;

E. Electrostatic preparation coatings;

F. Resist coatings; and

G. Stencil coatings.

11. For pleasure craft surface coating operations, the application equipment requirements in paragraph (3)(J)4. of this rule do not apply to extreme high-gloss coatings.

12. The limits for military specification coatings in subparagraph (3)(J)2.B. of this rule do not apply to coatings that meet the following criteria:

A. The coating is only applied to military equipment used for national defense;

B. The coating performance is critical to the successful operation of the military equipment; and

C. The coating is mandated in a specification or contract and a substitution of coatings that meet the VOC limits in subparagraph (3)(J)2.B. of this rule is prohibited.

13. The limits for pleasure craft coatings in subparagraph (3)(J)2.B. do not apply to pleasure craft touch-up and repair coatings supplied by the manufacturer or supplier in containers with a net volume of one (1) liter or less.

(K) Industrial Adhesive Application.

1. The requirements in this subsection apply to adhesive application processes.

2. Emission limits.

A. No owner or operator of an adhesive application process subject to this subsection may cause, allow, or permit the discharge into the ambient air of any VOCs in excess of the following, as delivered to the coating applicator(s):

Category	Emission Limit pounds of VOC per gallon of coating (minus water and exempt compounds)
Adhesives Applied to the Specific Substrates	
Reinforced Plastic Composites	1.7
Flexible Vinyl	2.1
Metal	0.3
Porous Material (Except Wood)	1.0
Rubber	2.1
Wood	0.3
Other Substrates	2.1
Specialty Adhesive Application Processes	
Ceramic Tile Installation	1.1
Contact Adhesive	2.1
Cove Base Installation Adhesive	1.3
Floor Covering Installation Adhesive, Indoor	1.3
Floor Covering Installation Adhesive, Outdoor	2.1
Perimeter Bonded Sheet Flooring Installation	5.5
Metal to Urethane/Rubber Molding or Casting	7.1
Motor Vehicle	
Adhesive	2.1
Weatherstrip Adhesive	6.3
Multipurpose Construction	1.7
ABS Plastic Solvent Welding	3.3
Plastic Solvent Welding, Except ABS Plastic Solvent Welding	4.2
Sheet Rubber Lining Installation	7.1
Single-Ply Roof Membrane Installation/Repair, Except EPDM Glue	2.1
Structural Glazing	0.8
Thin Metal Laminating	6.5
Tire Repair	0.8

Waterproof Resorcinol Glue	1.4
Adhesive Primer Application Processes	
Glass-Bonding Primer (Motor Vehicle)	7.5
Plastic Solvent Welding Adhesive Primer	5.4
Single-Ply Roof Membrane Adhesive Primer	2.1
Other Adhesive Primer	2.1

B. The VOC limits in subparagraph (3)(K)2.A. of this rule for adhesives or adhesive primers applied to particular substrates shall apply as follows:

(I) If an adhesive is subject to a specific VOC limit in subparagraph (3)(K)2.A., the specific limit is applicable rather than an adhesive-to-substrate limit; and

(II) When an adhesive is used to bond dissimilar substrates, the applicable substrate category with the highest VOC content determines the limit.

3. Method and determination of compliance. The emission limits in paragraph (3)(K)2. of this rule shall be achieved through one (1) of the following:

A. VOC content of coatings. Determine the daily volume-weighted average VOC content of all coatings used in an adhesive application process, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds) per subparagraph (5)(C)3.A. of this rule. The adhesive application process is in compliance if this value is less than or equal to the emission limits in paragraph (3)(K)2. of this rule;

B. Combination of VOC content of coatings and add-on controls. Calculate the required control system efficiency per paragraph (5)(C)4. of this rule. The adhesive application process is in compliance if the actual overall control system efficiency is greater than or equal to the required control system efficiency; or

C. Control system. If a control system is used to achieve compliance, the overall control system efficiency must be eighty-five percent (85%) or greater.

4. Application equipment. One (1) or a combination of the following equipment shall be used for adhesive application, unless achieving compliance by using an add-on control device per subparagraph (3)(K)3.C. of this rule:

A. Electrostatic spray application;

B. HVLP spray equipment;

C. Flow coating;

D. Roller coating or hand application, including non-spray application methods similar to hand- or mechanically-powered caulking gun, brush, or direct hand application;

E. Dip coating, including electrodeposition;

F. Airless spray;

G. Air-assisted airless spray;

H. Ink jet technology; and

I. Other coating application method capable of achieving a transfer efficiency equivalent or better than achieved by HVLP spraying.

5. Work practices. Work practices shall be used to minimize VOC emissions from solvent storage, mixing operations, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices include, but are not limited to, the following:

A. Store all VOC-containing coatings, thinners, and cleaning materials in closed containers;

B. Ensure that mixing and storage containers used for VOC-containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials;

C. Minimize spills of VOC-containing coatings, thinners, and cleaning materials;

D. Clean up spills immediately;

E. Convey any coatings, thinners, and cleaning materials in closed containers or pipes from one (1) location to another; and

F. Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

(4) Reporting and Record Keeping.

(A) The owner or operator of a surface coating unit covered under this rule shall keep records as necessary to determine compliance. Records kept should be appropriate for the facility, their products, and operations. These may include, as applicable, one (1) or more of the following:

1. Current list of coatings used and the VOC content as-applied;

2. Daily volume usage of each coating;

3. Records of the weighted average VOC content for each coating type included in averaging for coating operations that achieve compliance through coating VOC content or a combination of coating VOC content and control system;

4. Annual VOC emissions from surface coating equipment cleaning; and

5. All test results to determine capture efficiency, control efficiency, and coating properties.

(B) Records such as daily production rates may be substituted for actual daily coating use measurements provided the owner submits a demonstration, approved by the director, that these records are adequate for the purposes of this rule.

(C) Any owner or operator using an emission control device to achieve compliance shall maintain daily records of key system operating parameters for emission control equipment including, but not limited to:

1. Identification of the type of emissions control system used;

2. Hours of operation;

3. Routine and non-routine maintenance, including dates and duration of any outages;

4. Records of test reports conducted;

5. An owner or operator of a surface coating unit employing a thermal or catalytic oxidizer to achieve compliance shall comply with the following requirements:

A. Continuous temperature monitoring and recording equipment shall be installed and operated to accurately measure the operating temperature(s) for the control device; and

B. The following information shall be collected and recorded each day of operation of the surface coating unit and the control device:

(I) A log or record of the operating time for the control device, monitoring equipment, and the associated surface coating unit;

(II) For thermal oxidizers, all three (3)-hour periods of operation during which the average combustion temperature was more than fifty degrees Fahrenheit (50 °F) below the average combustion temperature during the most recent emission test that demonstrated that the surface coating unit was in compliance; and

(III) For catalytic oxidizers, all three (3)-hour periods of operation during which the average temperature of the exhaust gases immediately before the catalyst bed was more than fifty degrees Fahrenheit (50 °F) below the average temperature of the exhaust gases during the most recent emission test that demonstrated that the surface coating unit was in compliance, and all three (3)-hour periods during which the average temperature difference across the catalyst bed was less than eighty percent (80%) of the average temperature difference during the most recent emission test that demonstrated that the surface coating operation was in compliance; and

6. An owner or operator of a surface coating unit employing a carbon adsorption system to achieve compliance shall comply with the following requirements:

A. The following types of monitoring and recording equipment shall be installed and operated for the carbon adsorption system:

(I) A continuous emission monitoring and recording system that is capable of accurately measuring and recording the concentration of organic compounds in the exhaust gases from the carbon adsorption system;

(II) Monitoring and recording equipment that is capable of accurately measuring and recording the total mass steam flow rate for each regeneration cycle of each carbon bed; and

(III) Monitoring and recording equipment that is capable of accurately measuring and recording the temperature of each carbon bed after regeneration (and after completion of any cooling cycle(s)); and

B. The following information shall be collected and recorded each day of operation of the surface coating unit and the carbon adsorption system:

(I) A log or record of the operating time for the carbon adsorption system, monitoring equipment, and the associated surface coating unit;

(II) For a carbon adsorption system that employs a continuous emission monitoring and recording system to measure and record the concentration of organic compounds in the exhaust gases, all three (3)-hour periods of operation during which the average concentration level or reading in the exhaust gases is more than twenty percent (20%) greater than the exhaust gas organic compound concentration level or reading measured by the most recent performance test that demonstrated that the surface coating unit was in compliance;

(III) For a carbon adsorption system that employs monitoring and recording equipment to measure and record the total mass steam flow rate for each regeneration cycle of each carbon bed, all carbon bed regeneration cycles during which the total mass steam flow rate was more than ten percent (10%) below the total mass steam flow rate during the most recent performance test that demonstrated that the surface coating unit was in compliance; and

(IV) For a carbon adsorption system that employs monitoring and recording equipment to measure and record the temperature of each carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than ten percent (10%) greater than the carbon bed temperature during the most recent performance test that demonstrated that the surface coating unit was in compliance.

(D) Records required under subsections (4)(A) through (4)(C) of this rule shall be retained by the owner or operator for a minimum of five (5) years and made available to the director upon request.

(5) Test Methods.

(A) Test Methods for Control Systems. Owners or operators demonstrating compliance with the provisions of this rule via a control system shall determine the overall control system efficiency as the product of the capture efficiency and control device efficiency, using the following test methods:

1. The VOC concentration of gaseous air streams shall be determined with a test consisting of three (3) separate runs, each

lasting a minimum of sixty (60) minutes using one (1) of the following methods as specified by 40 CFR 60, Appendix A in 10 CSR 10-6.030(22):

A. Method 18—Measurement of Gaseous Organic Compound Emissions by Gas Chromatography;

B. Method 25—Determination of Total Gaseous Non-methane Organic Emissions as Carbon; or

C. Method 25A—Determination of Total Gaseous Organic Concentration Using Flame Ionization Analyzer;

2. Sample and velocity traverses shall be determined by using one (1) of the following methods as specified by 40 CFR 60, Appendix A in 10 CSR 10-6.030(22):

A. Method 1—Sample and Velocity Traverses for Stationary Sources; or

B. Method 1A—Sample and Velocity Traverses for Stationary Sources with Small Stacks or Ducts;

3. Velocity and volumetric flow rates shall be determined by using one (1) of the following methods as specified by 40 CFR 60, Appendix A in 10 CSR 10-6.030(22):

A. Method 2—Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube);

B. Method 2A—Direct Measurement of Gas Volume Through Pipes and Small Ducts;

C. Method 2C—Determination of Stack Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube);

D. Method 2D—Measurement of Gas Volumetric Flow Rates in Small Pipes and Ducts;

E. Method 2F—Determination of Stack Gas Velocity and Volumetric Flow Rate With Three-Dimensional Probes;

F. Method 2G—Determination of Stack Gas Velocity and Volumetric Flow Rate With Two-Dimensional Probes; or

G. Method 2H—Determination of Stack Gas Velocity Taking Into Account Velocity Decay Near the Stack Wall;

4. To analyze the exhaust gases, use Method 3 as specified by 40 CFR 60, Appendix A in 10 CSR 10-6.030(22);

5. To measure the moisture in the stack gas, use Method 4 as specified by 40 CFR 60, Appendix A in 10 CSR 10-6.030(22); and

6. To determine capture efficiency, use the procedure in 10 CSR 10-6.030(20).

(B) Test Methods for Determining Coating Properties. The coating properties in paragraphs (5)(B)1. through (5)(B)6. of this rule shall be determined from the coating manufacturer's supplied data or the Method 24 as specified by 40 CFR 60, Apendix A in 10 CSR 10-6.030(22). If there is a discrepancy between the manufacturer's supplied data and the Method 24, compliance shall be based on Method 24.

1. Density of coating, D_C.

A. Electrodeposition primer. For electrodeposition primer, the coating density is as-received.

B. All other coatings. For all other coatings, the coating density is as-applied.

2. Volume fraction of solids in the coating, V_S.

A. Electrodeposition primer. For electrodeposition primer, the volume fraction of solids in the coating is as-received.

B. All other coatings. For all other coatings, the volume fraction of solids in the coating is as-applied.

3. Weight fraction of exempt compounds in the coating, W_E.

4. Weight fraction of regulated VOC in the coating, W_O. This value does not include the weight fraction of water or exempt compounds.

A. Electrodeposition primer. For electrodeposition primer, the weight fraction of VOC in the coating is as-received.

B. All other coatings. For all other coatings, the weight fraction of VOC in the coating is as-applied.

5. Weight fraction of solids in the coating, W_S.

6. Weight fraction of water in the coating, W_W.

(C) Other Test Methods and Calculations.

1. Calculating the VOC content of the coating.

A. The VOC content of the coating as-applied, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds), shall be determined using Equation (1) as follows:

$$B = \frac{D_C \times W_O}{1 - \left(\frac{D_C \times W_W}{8.33}\right) - \left(\sum_{j=1}^{m} \frac{D_C \times W_{E_j}}{D_{E_j}}\right)} \quad (1)$$

Where:

B = VOC content of the coating as-applied, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds);

D_C = density of coating as-applied, expressed as pounds per gallon;

W_O = weight fraction of regulated VOC in the coating, as-applied. This value does not include the weight fraction of water or exempt compounds;

W_W = weight fraction of water in the coating, as-applied;

W_E = weight fraction of exempt compounds in the coating, as-applied;

D_E = density of each exempt compound, expressed as pounds per gallon;

m = number of exempt compounds in the coating; and

8.33 = density of water, expressed as pounds per gallon.

B. The VOC content of the coating as-applied, expressed as pounds of VOC per gallon of coating solids, shall be determined using Equation (2) as follows:

$$B_S = \frac{D_C \times W_O}{V_S} \quad (2)$$

Where:

B_S = VOC content of the coating as-applied, expressed as pounds of VOC

per gallon of coating solids;

D_C = density of coating as-applied, expressed as pounds per gallon;

W_O = weight fraction of regulated VOC in the coating, as-applied. This value does not include the weight fraction of water or exempt compounds; and

V_S = volume fraction of solids in the coating, as-applied.

C. The VOC content of the coating as-applied, expressed as pounds of VOC per pound of coating solids, shall be determined using Equation (3) as follows:

$$B_{MWS} = \frac{D_C \times W_O}{D_C \times W_S} \quad (3)$$

Where:

B_{MWS} = VOC content of the coating as-applied, expressed as pounds of VOC per pound of coating solids;

D_C = density of coating as-applied, expressed as pounds per gallon;

W_O = weight fraction of regulated VOC in the coating, as-applied. This value does not include the weight fraction of water or exempt compounds; and

W_S = weight fraction of solids in the coating, as-applied.

2. Equivalent emission limits. Emission limits expressed as pounds of VOC per gallon of coating (minus water and exempt compounds) shall be converted to an equivalent emission limit expressed as pounds of VOC per gallon of coating solids using Equation (4) as follows:

$$L_S = \frac{L}{\left(1 - \frac{L}{7.36}\right)} \quad (4)$$

Where:

L_S = emission limit expressed as pounds of VOC per gallon of coating solids;

L = emission limit expressed as pounds of VOC per gallon of coating

(minus water and exempt compounds); and

7.36 = average density of solvents, in pounds per gallon, used to originally establish the emission limits.

3. Weighted averaging.

A. The daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds), shall be calculated using Equation (5) as follows:

$$DAVG_{VW} = \frac{\sum_{i=1}^{n}(A_i \times B_i)}{C} \quad (5)$$

Where:

$DAVG_{VW}$ = daily volume-weighted average VOC content, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds);

A = daily gallons of each coating used (minus water and exempt compounds) in a surface coating unit;

B = VOC content of the coating as-applied, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds). This is determined by subparagraph (5)(C)1.A. of this rule;

C = total daily gallons of coatings used (minus water and exempt compounds) in a surface coating unit; and

n = number of coatings used in a surface coating unit.

B. The daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating solids, shall be calculated using Equation (6) as follows:

$$DAVG_{VWS} = \frac{\sum_{i=1}^{n}(A_{s_i} \times B_{S_i})}{C_s} \quad (6)$$

Where:

$DAVG_{VWS}$ = daily volume-weighted average VOC content, expressed as

pounds of VOC per gallon of coating solids;

A_S = daily gallons of coating solids for each coating used in a surface coating unit;

B_S = VOC content of the coating as-applied, expressed as pounds of VOC per gallon of coating solids. This is determined by subparagraph (5)(C)1.B. of this rule;

C_S = total daily gallons of coatings solids used in a surface coating unit; and

n = number of coatings used in a surface coating unit.

C. The daily mass-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per pound of coating solids, shall be calculated using Equation (7) as follows:

$$DAVG_{MWS} = \frac{\sum_{i=1}^{n} (A_{MWS_i} \times B_{MWS_i})}{C_{MWS}} \quad (7)$$

Where:

$DAVG_{MWS}$ = daily mass-weighted average VOC content, expressed as pounds of VOC per pound of coating solids;

A_{MWS} = daily pounds of coating solids for each coating used in a surface coating unit;

B_{MWS} = VOC content of the coating as-applied, expressed as pounds of VOC per pound of coating solids. This is determined by subparagraph (5)(C)1.C. of this rule;

C_{MWS} = total daily pounds of coatings solids used in a surface coating unit; and

n = number of coatings used in a surface coating unit.

D. The monthly volume-weighted average VOC emission rate of an electrodeposition primer, expressed as pounds of VOC per gallon of coating solids deposited, shall be determined using Equation (8) as follows:

$$MAVG_{VWS} = \left[\frac{\sum_{i=1}^{n} L_{C_i} D_{C_i} W_{O_i} + \sum_{j=1}^{m} L_{D_j} D_{D_j}}{\sum_{i=1}^{n} L_{C_i} V_{S_i}} \right] X[1-E/100] \quad (8)$$

Where:

$MAVG_{VWS}$ = monthly volume-weighted average VOC emission rate of the electrodeposition primer, expressed as pounds of VOC per gallon of coating solids deposited;

L_C = monthly volume of each coating consumed, as-received, expressed as gallons;

D_C = density of each coating as-received, expressed as pounds per gallon;

W_O = weight fraction of VOC in each coating, as-received;

L_D = monthly volume of each type of VOC dilution solvent added to the coating, expressed as gallons;

D_D = density of each type of VOC dilution solvent added to the coating, expressed as pounds per gallon;

V_S = volume fraction of solids in each coating as-received, expressed as gallons of solids per gallon of coating;

E = overall control system efficiency;

n = number of coatings used; and

m = number of VOC dilution solvents used.

E. The monthly volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds), shall be calculated using Equation (9) as follows:

$$MAVG_{VW} = \frac{\sum_{i=1}^{n} (A_i \times B_i)}{C} \quad (9)$$

Where:

$MAVG_{VW}$ = monthly volume-weighted average VOC content as-applied, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds);

A = monthly gallons of each coating used (minus water and exempt compounds) in a surface coating unit;

B = VOC content of the coating as-applied, expressed as pounds of VOC per gallon of coating (minus water and exempt compounds), as delivered to the coating applicator. This is determined by subparagraph (5)(C)1.A. of this rule;

C = total monthly gallons of coatings used (minus water and exempt compounds) in a surface coating unit; and

n = number of coatings used in a surface coating unit.

4. The required control system efficiency shall be determined using Equation (10) as follows:

$$R = \left[\frac{(DAVG_{VWS} - L_S)}{DAVG_{VWS}} \right] \times 100 \qquad (10)$$

Where:

R = required control system efficiency;

$DAVG_{VWS}$ = daily volume-weighted average VOC content of all coatings used in a surface coating unit, expressed as pounds of VOC per gallon of coating solids, per subparagraph (5)(C)3.B. of this rule; and

L_S = emission limits expressed as pounds of VOC per gallon of coating solids, per paragraph (5)(C)2. of this rule.

EPA Rulemakings

CFR: 40 C.F.R. 52.1320(c)
FRM: 85 FR 57721 (9/16/20)
PRM: 85 FR 41477 (7/10/20)
State Submission: 3/7/2019
State Final: 10 C.S.R. 10-5 (2/28/19); effective 3/30/19
APDB File: MO-425
Description: The revisions to the rule add a new surface coating category for the decorative coating of foam products, establish an appropriate emission limit for this type of surface coating operation, remove obsolete provisions that were applicable prior to March 1, 2012, remove a reference to a rule that is being rescinded, remove restrictive words, add definitions specific to this rule, change rule language to be consistent with defined terms, and update incorporations by reference. The remaining revisions are administrative.

CFR: 40 C.F.R. 52.1320(c)
FRM: 77 FR 3144 (1/23/12)
PRM: 76 FR 66013
State Submission: 1/17/2007
State Final: section 643.050, RSMo Supp. 2010; effective Aug. 30, 2011.
APDB File: MO-305
Description: This rule was revised to exempt facilities that are regulated under other rules that limit emissions of VOCs and incorporate changes in RACT for surface coating operations in the St. Louis Ozone nonattainment area to be consistent with the current federal RACT CTGs.

CFR: 40 C.F.R. 52.1320(c)
FRM: 66 FR 37904 (7/20/01)
PRM: 66 FR 37941 (7/20/01)
State Submission: 2/21/01
State Final: 10 C.S.R. 10-5 (1/30/01)
APDB File: MO-183
Description: This rule was revised to delete conditions for aerospace manufacture and rework facilities which are also contained in rule 10 C.S.R. 10-5.295, Control of Emissions From Aerospace Manufacture and Rework Facilities.

CFR: 40 C.F.R. 52.1320(c)(79)(i)(B)
FRM: 59 FR 43480 (8/24/94, Correction Notice 60 FR 16806 (4/3/95)
PRM: 57 FR 32191 (7/21/92)
State Submission: 11/20/91
State Proposal: 16 MR 989 (7/1/91)
State Final: 10 C.S.R. 10-5 (11/29/91)
APDB File: MO-100
Description: This revision updates this rule to include the correct reference method specified in 10 C.S.R. 10-6.030.

CFR: 40 C.F.R. 52.1320(c)(72)(i)(A)(B)(C)
FRM: 55 FR 213 (11/2/90)
PRM: 55 FR 27657 (7/5/90)
State Submission: 1/11/90
State Proposal: 14 MR 932 (7/17/89)
State Final: 14 MR 1501 (11/16/89)
APDB File: MO-75
Description: This revision rescinds the existing St. Louis industrial surface coating VOC RACT rule, and a new rule was adopted which clarifies source application levels, and compliance methods and test procedures.

CFR: 40 C.F.R. 52.1320(c)(50)
FRM: 50 FR 14925 (4/16/85)
PRM: 49 FR 42749 (10/24/84)
State Submission: 1/24/84
State Proposal: 8 MR 977 (9/1/83)
State Final: 9 MR 249 (1/3/84)
APDB File: MO-57
Description: The EPA approved a revision to the rule which added an emission limitation for coating of plastic parts.

CFR: 40 C.F.R. 52.1320(c)(25)(i)
FRM: 46 FR 20172 (4/3/81)
PRM: 45 FR 84099 (12/22/80)
State Submission: 9/2/80
State Proposal: 5 MR 380 (4/1/80)
State Final: 5 MR 1139 (9/2/80)
APDB File: MO-12
Description: The EPA approved revisions to the rule which added emission limitations for miscellaneous metal parts, aerospace assembly and components, railroad cars, farm implements and machinery, heavy-duty trucks, and other metal parts; and changed the applicability limit to 10 TPY for miscellaneous metal parts. Exemptions for airplanes, auto refinishing, customized top coating of autos and trucks, marine vessels, and aerospace components were approved.

CFR: 40 C.F.R. 52.1320(c)(16)(xi)
FRM: 45 FR 24140 (4/9/80) and 45 FR 46806 (7/11/80) (correction)
PRM: 44 FR 61384 (10/25/79)
State Submission: 6/29/79
State Proposal: 4 MR 93 (2/1/79)
State Final: 4 MR 607 (7/2/79)
APDB File: MO-01
Description: The EPA approved a new regulation as part of the 1979 ozone plan. The rule established emission limits on surface coating of magnet wire, metal furniture, auto and light-duty trucks, paper, vinyl, fabric, coils, and cans. Provisions for alternative compliance plans and exemptions for sources emitting less than 50 TPY were approved.

Difference Between the State and EPA-Approved Regulation

None.