

**R307. Environmental Quality, Air Quality.****R307-340. Ozone Nonattainment and Maintenance Areas: Surface Coating Processes.****R307-340-1. Purpose.**

The purpose of this rule is to establish Reasonably Available Control Technology(RACT) for surface coating operations that are located in an ozone nonattainment or maintenance area. This rule is based on federal control technique guidance documents.

**R307-340-2. Applicability.**

R307-340 applies to the owner or operator who applies surface coating of paper, fabric, vinyl, metal furniture, large appliance, magnet wire, flat wood, miscellaneous metal parts and products, and graphic arts in any ozone nonattainment or maintenance area.

**R307-340-3. Definitions.**

The following additional definitions apply to R307-340:

"Air Dried Coating" means coatings that are dried by the use of air or a forced warm air at temperatures up to 90 degrees C (194 degrees F).

"Application Area" means the area where the coating is applied by spraying, dipping, or flow coating techniques.

"Basecoat" means a primary flat wood coating or coloring of panels and normally should completely hide substrate characteristics.

"Capture System" means the equipment (including hoods, ducts, fans, etc.) used to contain, capture, or transport a pollutant to a control device.

"Class II Hard Board Paneling Finish" means finishes that meet the specifications of voluntary product standards PS-9-73 as approved by the American National Standards Institute.

"Clear Coat" means a coating that lacks color and opacity.

"Coating" means a protective, functional, or decorative film applied in a thin layer to a surface. This term often applies to paints such as lacquers or enamels, but is also used to refer to films applied to paper, plastics, or foil.

"Coating Application System" means all operations and equipment that applies, conveys, and dries a surface coating, including, but not limited to, spray booths, flow coaters, flash off areas, air dryers and ovens.

"Curtain Coating" means the application of a coating material to a wood substrate by means of a free-falling film of coating.

"Exterior Single Coat" means the same as topcoat but is applied directly to the metal substrate omitting the primer application.

"Extreme Performance Coatings" means coatings designed for harsh exposure or extreme environmental conditions.

"Fabric Coating" means the coating or saturation of a textile substrate with a knife, roll or rotogravure coater to impart characteristics that are not initially present, such as strength, stability, water or acid repellency, or appearance.

"Filler" means a type of coating used to fill pores, voids, and cracks in wood to provide a smooth surface. It can also be

1 used to accentuate the grain of natural hardwood veneers.

2 "Flat Wood Coating" means the surface coating of any flat  
3 wood products.

4 "Flexographic Printing" means the application of works,  
5 designs, and pictures to substrate by means of a roll printing  
6 technique in which the pattern to be applied is raised above the  
7 printing roll and the image carrier is made of rubber or other  
8 elastomeric materials.

9 "Groove Coat" means a flat wood coating that covers grooves  
10 cut into the panel to assure that the grooves are compatible with  
11 the final surface color.

12 "Hardwood Plywood" means plywood whose surface layer is a  
13 veneer of hardwood.

14 "Ink" means a flat wood coating used to put a decorative  
15 design on printed panels. It can also produce special appearances  
16 on natural hardwood plywood.

17 "Interior Single Coat" means a single film of coating applied  
18 to internal parts of large appliances that are not normally  
19 visible to the user.

20 "Knife Coating" means the application of a coating material  
21 to a substrate by means of drawing the substrate beneath a blade  
22 that spreads the coating evenly over the width of the substrate.

23 "Large Appliances" means doors, cases, lids, panels, and  
24 interior support parts of residential and commercial washers,  
25 dryers, ranges, refrigerators, freezers, water heaters,  
26 dishwashers, trash compactors, air conditioners, and other similar  
27 products.

28 "Low Organic Solvent Coating" means coatings that contain  
29 less organic solvents than the conventional coatings used by  
30 industry. Low organic solvent coatings include water-borne,  
31 higher-solids, electrodeposition, and powder coatings.

32 "Magnet Wire Coating" means the process of applying coating  
33 of electrical insulating varnish or enamel to aluminum or copper  
34 wire for use in electrical machinery.

35 "Metal Furniture Coating" means the surface coating of any  
36 furniture made of metal or any metal part that will be assembled  
37 with other metal, wood fabric, plastic, or glass parts to form a  
38 furniture piece.

39 "Natural Finish Hardwood Plywood Panels" means panels whose  
40 original grain pattern is enhanced by essentially transparent  
41 finishes frequently supplemented by fillers and toners.

42 "Packaging Rotogravure Printing" means rotogravure printing  
43 upon paper, paper board, metal foil, plastic film, and other  
44 substrates, which are, in subsequent operations, formed into  
45 packaging products and labels.

46 "Paper Coating" means uniform distribution of coatings put on  
47 paper and pressure sensitive tapes regardless of substrate.  
48 Related web coating processes on plastic film and decorative  
49 coatings on metal foil are included in this definition. Paper  
50 coating covers saturation operations as well as coating  
51 operations. (Saturation means dipping the web into a bath).

52 "Particle Board" means a manufactured board made of  
53 individual particles that have been coated with a binder and

1 formed into flat sheets by pressure.

2 "Pressure Head Coating" means the application of a coating  
3 material to a wood substrate by means of a pressure head coater  
4 where coating material is metered into a pressure head and forced  
5 through a calibrated slit between two knives.

6 "Prime Coat" means the first film of coating applied in a  
7 two-coat operation.

8 "Primer" means a flat wood coating used to protect the wood  
9 from moisture and to provide a good surface for further coating  
10 applications.

11 "Printed Interior Panels" means panels whose grain or natural  
12 surface is obscured by fillers or basecoats upon which a simulated  
13 grain or decorative pattern is printed.

14 "Publication of Rotogravure Printing" means rotogravure  
15 printing upon paper that is subsequently formed into books,  
16 magazines, catalogues, brochures, directories, newspaper  
17 supplements, and other types of printed materials.

18 "Roll Coating" means the application of a coating material to  
19 a substrate by means of hard rubber or steel rolls.

20 "Roll Printing" means the application of words, designs and  
21 pictures to a substrate usually by means of a series of hard  
22 rubber or steel rolls each with only partial coverage.

23 "Rotogravure Coating" means the application of a uniform  
24 layer of material across the entire width of the web to substrate  
25 by means of a roll coating technique in which the pattern to be  
26 applied is etched on the coating roll. The coating material is  
27 picked up in these recessed areas and is transferred to the  
28 substrate.

29 "Rotogravure Printing" means the application of words,  
30 designs, and pictures to a substrate by means of a roll printing  
31 technique that involves a recessed image area in the form of  
32 cells.

33 "Sealer" means a type of coating used to seal off substances  
34 in the wood that may affect subsequent finishes as well as protect  
35 the wood from moisture.

36 "Single Coat" means a single film of coating applied directly  
37 to the metal substrate omitting the primer application.

38 "Specialty Printing Operations" means all gravure and  
39 flexographic operations that print a design or image, excluding  
40 publication gravure and packaging gravure printing. Specialty  
41 printing operations include, among other things, printing on paper  
42 cups and plates, patterned gift wrap, wallpaper, and floor  
43 coverings.

44 "Stain" means a nonprotective flat wood coating that colors  
45 the wood surface without obscuring the grain.

46 "Tile Board" means paneling that has a colored waterproof  
47 surface coating.

48 "Vinyl Coating" means applying a decorative or protective top  
49 coat, or printing on vinyl coated fabric or vinyl sheets.

50

51 **R307-340-4. General Provisions for Volatile Organic Compounds.**

52 (1) Fugitive emissions. Control techniques and work  
53 practices are to be implemented at all times to reduce volatile

1 organic compound (VOC) emissions from fugitive type sources.  
2 Control techniques and work practices include:  
3 (a) tight fitting covers for open tanks;  
4 (b) covered containers for solvent wiping cloths;  
5 (c) collection hoods for areas where solvent is used for  
6 cleanup; and  
7 (d) proper disposal of dirty cleanup solvent.  
8 (2) Record keeping and reporting.  
9 (a) The owner or operator of any source subject to R307-340  
10 shall maintain:  
11 (i) Records detailing all malfunctions affecting control  
12 equipment;  
13 (ii) Records of all testing conducted under R307-340-15;  
14 (iii) Records of all monitoring conducted under R307-340-15;  
15 and  
16 (iv) Records of the daily use of all paints, stains,  
17 lacquers, solvents, and other materials that may be a source of  
18 VOC emissions.  
19 (v) The recording format shall, at a minimum, follow the  
20 guidance in EPA-340/1-88-003, "Recordkeeping Guidance Document for  
21 Surface Coating Operations and the Graphic Arts Industry", or the  
22 most recent EPA guidance, and shall contain all information  
23 necessary to determine compliance with emissions limits on a daily  
24 basis.  
25 (b) The owner or operator shall:  
26 (i) Install; operate; and maintain process or control  
27 equipment, or both; monitoring instruments or procedures; as  
28 necessary to comply with (2)(a) above; and  
29 (ii) Maintain, in writing, data or reports, or both,  
30 relating to monitoring instruments or procedures to document, upon  
31 review, the compliance status of the VOC emission source or  
32 control equipment.  
33 (c) Copies of all records and reports required by (2)(a) and  
34 (b) above shall be retained by the owner or operator for a minimum  
35 of two years after the date on which the record was made, and  
36 shall be made available to the executive secretary or  
37 representative upon verbal or written request.  
38 (d) If add-on control equipment is used, in addition to the  
39 requirements of R307-340-15(5), the following information, as  
40 determined applicable for each source by the executive secretary,  
41 shall be monitored and recorded daily in order to assure  
42 continuous compliance. The substitution of continuous recordings  
43 of system operation for daily recordings may be allowed by the  
44 executive secretary. The required information pertains to the  
45 following systems:  
46 (i) capture systems: fan power use, duct flow, and duct  
47 pressure.  
48 (ii) carbon absorbers systems: bed temperature, bed vacuum  
49 pressure, pressure at the vacuum pump, accumulated time of  
50 operation, concentration of VOCs in the outlet gas, and solvent  
51 recovery.  
52 (iii) refrigeration systems: compressor discharge and  
53 suction pressures, condenser fluid temperature, and solvent

1 recovery.

2 (iv) incinerator systems: exhaust gas temperature,  
3 temperature rise across a catalytic incinerator bed, flame  
4 temperature, and accumulated time of incineration.

5 (3) Malfunctions, Breakdowns, and Upsets. The owner or  
6 operator of a surface coating installation shall maintain a record  
7 of malfunctions, breakdowns, and upsets that result in excess VOC  
8 emissions. The record shall be kept for a calendar year and shall  
9 be submitted to the executive secretary by April 1 of the  
10 following year.

11 (4) Disposal of waste solvents. Waste solvents or waste  
12 materials that contain solvents shall be disposed of by recycling,  
13 reclaiming or by incineration in an incinerator approved to  
14 process hazardous materials or by an alternate means approved by  
15 the executive secretary.

16 (5) Compliance Calculation Procedures.

17 (a) Compliance with R307-340 shall be determined on a daily  
18 basis. Sources may request approval for longer times for  
19 compliance determination from the executive secretary.

20 (b) Compliance calculation procedures shall follow the  
21 guidance of "Procedures for Certifying Quantity of  
22 VOCs Emitted by Paint, Ink, and other Coatings," EPA-450/3-84-019,  
23 or the most recent EPA guidance. Sources that use add-on  
24 controls, or an approved alternative strategy instead of low  
25 solvent technology to meet the applicable emission limit, shall  
26 meet the equivalent VOCs emission limit on the basis of solids  
27 applied (lbs. VOCs/gallon solids applied, or lbs. VOCs/lb. solids  
28 applied, for graphic arts sources).

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### 30 **R307-340-5. Paper Coating.**

31 (1) R307-340-5 applies to roll, knife rotogravure coaters  
32 and drying ovens of paper coating operations.

33 (2) No owner or operator of a paper coating operation  
34 subject to R307-340-5 may cause, allow or permit the discharge  
35 into the atmosphere of any VOC in excess of 0.35 kilograms per  
36 liter of coating (2.9 pounds per gallon), excluding water and  
37 solvents exempt from the definition of VOC, delivered to the  
38 coating application from a paper coating operation.

39 (3) Equivalency calculations for coatings should be  
40 performed in units of lbs. VOCs/gallon of solid rather than lbs.  
41 VOC/gallon of coating when determining compliance. The equivalent  
42 emission limit is 4.8 lbs. VOC/gallon of solid.

43 (4) The emission limit specified above shall be achieved by:

44 (a) The application of a low solvent technology coating; or

45 (b) Incineration, provided that a minimum of 90 percent of  
46 non-methane VOCs (VOCs measured as total combustible carbon) that  
47 enter the incinerator are oxidized to carbon dioxide and water; or

48 (c) Through carbon adsorption provided that there is a  
49 minimum of 90% reduction efficiency of captured VOC emissions.

50 (5) The design, operation, and efficiency of any capture  
51 system used in conjunction with (4) above shall be certified in  
52 writing by the owner or operator and approved by the executive  
53 secretary.

**R307-340-6. Fabric and Vinyl Coating.**

(1) R307-340-6 applies to roll, knife or rotogravure coaters and drying ovens of fabric and vinyl coating operations.

(2) No owner or operator of a fabric or vinyl coating line subject to this section may cause, allow or permit the discharge into the atmosphere of any VOCs in excess of:

(a) 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water and solvents exempt from the definition of VOC, delivered to the coating applicator from a fabric coating line; or

(b) 0.45 kilograms per liter of coating (3.8 pounds per gallon), excluding water and solvents exempt from the definition of VOC, delivered to the coating applicator from a vinyl coating line.

(3) Equivalency calculations for coatings shall be performed in units of lbs. VOCs/gallon of solids rather than lbs. VOCs/gallon of coating when determining compliance. The equivalent emission limits shall be 4.8 lbs VOCs/gallon solids for fabric coating, and 7.9 lbs VOCs/gallon for vinyl coating.

(4) Organosol and plastisol coatings shall not be used to bubble emissions from vinyl printing and topcoating.

(5) The emission limitations specified above shall be achieved by:

(a) The application of a low solvent content coating technology; or

(b) Incineration, provided that a minimum of 90 percent of the non-methane VOCs (VOCs measured as total combustible carbon) that enter the incinerator are oxidized to carbon dioxide and water; or

(c) Through carbon adsorption provided that there is a minimum of 90 percent reduction efficiency of captured VOC emissions.

(6) The design, operation, and efficiency of any capture system used in conjunction with (5) above shall be certified in writing by the owner or operator and approved by the executive secretary.

**R307-340-7. Metal Furniture Coating VOC Emissions.**

(1) R307-340-7 applies to the application areas, flash-off areas, and ovens of metal furniture coating lines involved in prime and top-coat or single coat operations.

(2) No owner or operator of a metal furniture coating line subject to this section may cause, allow or permit the discharge into the atmosphere of any VOC in excess of 0.3 kilograms per liter of coating (3.0 pounds per gallon) excluding water and solvents exempt from the definition of VOC, delivered to the coating applicator from prime and topcoat or single coat operations.

(3) Equivalency calculations for coatings shall be performed in units of lbs. VOCs/gallon of solid rather than lbs. VOCs/gallon of coating when determining compliance. The equivalent emission limit is 5.1 lbs. VOCs/gallon solids.

1 (4) The emission limitation specified above shall be  
2 achieved by:

3 (a) The application of low solvent technology; or

4 (b) Incineration, provided that a minimum of 90 percent of  
5 the non-methane VOCs (VOCs measured as total combustible carbon)  
6 that enter the incinerator are oxidized to carbon dioxide and  
7 water; or

8 (c) using water-borne electrodeposition; or

9 (d) using water-borne spray, dip or flowcoat; or

10 (e) using powder; or

11 (f) using higher solids spray; or

12 (g) carbon adsorption.

13 (5) The design, operation, and efficiency of any capture  
14 system used in conjunction with (4) above shall be certified in  
15 writing by the owner or operator and approved by the executive  
16 secretary.

17  
18 **R307-340-8. Large Appliance Surface Coating VOC Emissions.**

19 (1) R307-340-8 applies to application areas flash-off areas  
20 and ovens of large appliance coating lines involved in prime,  
21 single or top coating operations.

22 (2) No owner or operator of a large appliance coating line  
23 subject to this section may cause, allow or permit the discharge  
24 to the atmosphere of any VOCs in excess of 0.34 kilograms per  
25 liter of coating (2.8 pounds per gallon), excluding water and  
26 solvents exempt from the definition of VOC, delivered to the  
27 coating applicator from prime, single, or top-coat coating  
28 operations.

29 (3) Equivalency calculations for coatings shall be performed  
30 in units of lbs. VOCs/gallon of solid rather than lbs. VOCs/gallon  
31 of coating when determining compliance. The equivalent emission  
32 limit is 4.5 lbs. VOCs/gallon solids.

33 (4) The emission limitations specified above shall be  
34 achieved by:

35 (a) The application of low solvent content technology; or

36 (b) Incineration provided 90 percent of the non-methane VOCs  
37 (VOCs measured as total combustible carbon) that enter the  
38 incinerator are oxidized to carbon dioxide and water; or

39 (c) using water-borne electrodeposition; or

40 (d) using water-borne spray, dip or flowcoat; or

41 (e) using powder; or

42 (f) using higher solids spray; or

43 (g) carbon adsorption.

44 (5) The design, operation, and efficiency or any capture  
45 system used in conjunction with (4) above shall be certified in  
46 writing by the owner or operator.

47  
48 **R307-340-9. Magnet Wire Coating VOC Emissions.**

49 (1) R307-340-9 applies to ovens of magnet wire coating  
50 operations.

51 (2) No owner or operator of a magnet wire coating oven  
52 subject to this section may cause, allow or permit discharge into  
53 the atmosphere of any VOCs in excess of 0.20 kilograms per liter

1 of coating (1.7 pounds per gallon), excluding water and solvents  
2 exempt from the definition of VOC, delivered to the coating  
3 applicator from magnet wire coating operations.

4 (3) Equivalency calculations for coatings shall be performed  
5 in units of lbs. VOCs/gallon of solid rather than lbs. VOCs/gallon  
6 of coating when determining compliance. The equivalent emission  
7 limit is 2.2 lbs. VOCs/gallon solids.

8 (4) The emission limitations specified above shall be  
9 achieved by:

10 (a) The application of low solvent content coating  
11 technology; or

12 (b) Incineration, provided that a minimum of 90 percent of  
13 the non-methane VOCs (VOCs measured as total combustible carbon)  
14 that enter the incinerator are oxidized to carbon dioxide and  
15 water; or

16 (5) The design, operation, and efficiency of any capture  
17 system used in conjunction with (4)(b) above shall be certified in  
18 writing by the owner or operator and approved by the executive  
19 secretary.

20

21 **R307-340-10. Flat Wood Coating.**

22 (1) R307-340-10 applies to the application areas of flat  
23 wood coating operations involved in but not limited to, filler,  
24 sealer, groove coat, primer, stain, basecoat, inks, and topcoat  
25 operations.

26 (2) No owner or operator of an interior printed hardwood,  
27 plywood, and particle board coating operation may cause, allow or  
28 permit discharge to the atmosphere of any VOCs in excess of a  
29 weighted average VOC content of 0.20 kilograms per liter of  
30 coating (1.7 pounds per gallon), excluding water and solvents  
31 exempt from the definition of VOC, delivered to a coating  
32 applicator from, but not limited to, filler, sealer, groove coat,  
33 primer, stain, basecoat, ink and topcoat operation.

34 (3) No owner or operator of a natural finish hardwood  
35 plywood coating operation may cause, allow or permit discharge to  
36 the atmosphere any VOCs in excess of a weighted average VOC  
37 content of 0.40 kilograms per liter of coating (3.3 pounds per  
38 gallon) excluding water and solvents exempt from the definition of  
39 VOC, delivered to a coating applicator from, but not limited to,  
40 filler, sealer, groove coat, primer, stain basecoat, ink and  
41 topcoat operations.

42 (4) No owner or operator of a Class II hardwood panel finish  
43 operation may cause, allow, or permit discharge to the atmosphere  
44 of any VOCs in excess of a weighted average VOC content of 0.34  
45 kilograms per liter of coating (2.8 pounds per gallon), excluding  
46 water and solvents exempt from the definition of VOC, delivered to  
47 a coating applicator from, but not limited to, filler, sealer,  
48 groove coat, primer, stain, basecoat, ink, and topcoat operations.

49 (5) The emission limitations specified above shall be  
50 achieved by:

51 (a) The application of low solvent technology; or

52 (b) The application of water-borne coating technology; or

53 (c) The application of ultraviolet-curable coating

1 technology; or.

2 (6) This regulation does not apply to the manufacture of  
3 exterior siding, tile board, or particle board used as a furniture  
4 component.

5 (7) Equivalency calculations for coatings shall be performed  
6 in units of lbs. VOCs/gallon of solid rather than lbs. VOCs/gallon  
7 of coating when determining compliance. The equivalent emission  
8 limit for interior printed hardwood, plywood, and particle board  
9 coating is 2.2 lbs. VOCs/gallon solids. The equivalent emission  
10 limit for natural finish hardwood plywood coating shall be 6.0  
11 lbs. VOCs/gallon solids. The equivalent emission limit for Class  
12 II hardwood panel finish operations is 4.5 lbs. VOCs/gallon  
13 solids.

14  
15 **R307-340-11. Miscellaneous Metal Parts and Products VOC**  
16 **Emissions.**

17 (1) R307-340-11 applies to the application areas, flash-off  
18 areas air and forced air dryers, and ovens used in the surface  
19 coating of miscellaneous metal parts and products:

20 (2) Applicable Industries:

21 (a) Large farm machinery (harvesting, fertilizing, planting,  
22 tractors, combines, etc.)

23 (b) Small farm machinery (lawn and garden tractors, lawn  
24 mowers, rototillers, etc.)

25 (c) Small appliance (fans, mixers, blenders, crock pots,  
26 vacuum cleaners, etc.)

27 (d) Commercial machinery (computers, typewriters,  
28 calculators, vending machines, etc.)

29 (e) Industrial machinery (pumps, compressors, conveyor  
30 components, fans, blowers, transformers, etc.)

31 (f) Fabricated metal products (metal covered doors, frames,  
32 trailer frames, etc.)

33 (g) Any other industrial category that coats metal parts or  
34 products under the standard Industrial Classification Code of  
35 major group 33 (primary metal industries), major group 34  
36 (fabricated metal products), major group 35 (nonelectric  
37 machinery), major group 36 (electrical machinery), major group 37  
38 (transportation equipment) major group 38 (miscellaneous  
39 instruments), and major group 39 (miscellaneous manufacturing  
40 industries).

41 (h) This regulation does not apply to:

42 (i) the surface coating of automobiles and light-duty  
43 trucks,

44 (ii) flat metal sheets and strips in the form of rolls or  
45 coils,

46 (iii) exterior of airplanes,

47 (iv) automobile refinishing,

48 (v) exterior of marine vessels,

49 (vi) customized top coating of automobiles and trucks if  
50 production is less than 35 vehicles per day,

51 (vii) a source whose potential VOC emissions are less than  
52 10 tons/year. Potential emissions are based upon design capacity  
53 (or maximum production), and 8760 hours/year, before add-on

1 controls. The potential emission level is determined on a plant-  
2 wide basis, summing all individual emission sources within the  
3 miscellaneous metal parts and products category.

4 (3) No owner or operator of a facility engaged in the  
5 surface coating of miscellaneous metal parts and products may  
6 cause, allow or permit discharge to the atmosphere of any VOCs in  
7 excess of:

8 (a) 0.52 kilograms per liter (4.3 pounds per gallon) of  
9 coating, excluding water and solvents exempt from the definition  
10 of VOC, delivered to a coating applicator that applies clear  
11 coating;

12 (b) 0.42 kilograms per liter (3.5 pounds per gallon) of  
13 coating, excluding water and solvents exempt from the definition  
14 of VOC, delivered to a coating applicator in a coating application  
15 system that utilizes air or forced warm air at temperatures up to  
16 90 degrees C (194 degrees F);

17 (c) 0.42 kilograms per liter (3.5 pounds per gallon) of  
18 coating, excluding water and solvents exempt from the definition  
19 of VOC, delivered to a coating applicator that applies extreme  
20 performance coatings;

21 (d) 0.36 kilograms per liter (3.0 pounds per gallon) of  
22 coating, excluding water and solvents exempt from the definition  
23 of VOC, delivered to a coating applicator for all other coating  
24 and coating application systems.

25 (4) Equivalency calculations for coatings shall be performed  
26 in units of lbs. VOCs/gallon of solid rather than lbs. VOCs/gallon  
27 of coating when determining compliance. The equivalent emission  
28 limit for air dried items is 6.7 lbs. VOCs/gallon solids. The  
29 equivalent emission limit for clear-coated items is 10.3 lbs.  
30 VOCs/gallon solids. The equivalent emission limit for extreme  
31 performance coatings is 6.7 lbs. VOCs/gallon solids. The  
32 equivalent emission limit for other coatings and systems is 5.1  
33 lbs. VOCs/gallon solids.

34 (5) If more than one emission limitation indicated in this  
35 section applies to a specific coating, then the least stringent  
36 emission limitation shall apply. All VOC emissions from solvent  
37 washing involved in a coating process shall be considered in the  
38 emission limitations set forth in R307-340-11(3), unless the  
39 solvent is directed into containers that prevent evaporation into  
40 the atmosphere.

41 (6) The emission limitations set forth in (3) above shall be  
42 achieved by:

43 (a) The application of low solvent technology; or

44 (b) An incineration system that oxidizes a minimum of 90  
45 percent of the non-methane VOCs (VOCs measured as total  
46 combustible carbon) to carbon dioxide and water.

47 (7) The design, operation, and efficiency of any capture  
48 system used in conjunction with (6)(b) above shall be certified in  
49 writing by the owner or operator and approved by the executive  
50 secretary.

51  
52 **R307-340-12. Graphic Arts.**

53 (1) R307-340-12 applies to: packaging and publication

1 rotogravure; packaging and publication flexographic; and specialty  
2 printing operations employing solvents containing ink and having  
3 plant-wide potential emissions of VOCs equal to or greater than 90  
4 megagrams/yr (100 tons/yr). Potential emissions shall be  
5 calculated based on uncontrolled emissions operating at design  
6 capacity or at maximum production for 8760 hours/year. (Solvent  
7 shall include that used for dilution of ink and for equipment  
8 cleaning.) Machines that have both coating units (application of a  
9 uniform layer of material across the entire width of a web) and  
10 printing units (formation of words, designs and pictures) shall be  
11 considered as performing a printing operation. This rule does not  
12 apply to offset lithography or letter press printing that do not  
13 use VOCs.

14 (2) No owner or operator of a packaging and publication  
15 rotogravure; packaging and publication flexographic, and specialty  
16 printing operations employing solvent containing ink may operate,  
17 cause, or allow or permit the operation of a facility unless:

18 (a) The volatile fraction of ink, as it is applied to the  
19 substrate, contains 25.0 percent by volume or less of organic  
20 solvent and 75.0 percent by volume or more of water; or

21 (b) The ink as it is applied to the substrate, less water,  
22 contains 60.0 percent by volume or more nonvolatile material; or

23 (c) The owner or operator installs and operates;

24 (i) A carbon adsorption system that reduces the volatile  
25 organic emissions from the capture system by a minimum of 90.0  
26 percent by weight; or

27 (ii) An incineration system that oxidizes a minimum of 90.0  
28 percent of the non-methane VOCs measured as total combustible  
29 carbon) to carbon dioxide and water.

30 (3) A capture system must be used in conjunction with the  
31 emission control systems indicated in this section. The design  
32 and operation of a capture system must be consistent with good  
33 engineering practices and shall be required to provide for an  
34 overall reduction in VOC emissions of at least:

35 (a) 75.0 percent where a publication rotogravure process is  
36 employed;

37 (b) 65.0 percent where a packaging rotogravure process is  
38 employed; or

39 (c) 60.0 percent where a flexographic printing process is  
40 employed.

41

#### 42 **R307-340-13. Exemptions.**

43 The requirements of R307-340-3 through 10 shall not apply to  
44 the following:

45 (1) sources whose emissions of VOCs are not more than 6.8  
46 kilograms (15 pounds) in any 24 hour period, nor more than 1.4  
47 kilograms (3 pounds) in any one (1) hour provided the emission  
48 rates are certified. These cutoffs apply to the emissions level  
49 on a plant-wide basis, and are determined by summing emissions  
50 from all coating operations within the same regulated category;

51 (2) sources used exclusively for chemical or physical  
52 analysis or determination of product quality and commercial  
53 acceptance provided;

1 (a) the operation of the source is not an integral part of  
2 the production process; and

3 (b) the emissions from the source do not exceed 363  
4 kilograms (800 pounds) in any one calendar month. These cutoffs  
5 apply to the emissions level on a plant-wide basis, and are  
6 determined by summing emissions from all coating operations within  
7 the same regulated category.

8  
9 **R307-340-14. Capture Systems.**

10 The design, operation and efficiency of any capture system  
11 used in conjunction with any emission control system shall be  
12 certified in writing by the source owner or operator and approved  
13 by the executive secretary. Unless the capture system meets the  
14 requirements for a total enclosure, specified in section  
15 60.713(b)(5)(i) of 40 CFR Part 60 Subpart SSS, or unless material  
16 balance techniques approved by the executive secretary are used to  
17 adequately determine overall VOC capture and destruction or  
18 recovery efficiency, the efficiency of the capture system will be  
19 determined by test methods approved by the executive secretary.  
20 Testing for capture efficiency shall be performed on a case-by-  
21 case basis as required by the executive secretary, and shall be  
22 consistent with EPA guidance. The requirements of R307-340-  
23 4(3)(d) apply to the capture and control device system. When  
24 capture and control device efficiency must be independently  
25 determined, the overall VOC emission percent reduction equals  
26 (percent capture efficiency x percent control device  
27 efficiency)/100.

28  
29 **R307-340-15. Testing and Monitoring.**

30 (1) Upon request by the executive secretary, the owner or  
31 operator of a VOC source required to comply with R307-340 shall  
32 demonstrate compliance by the method of this section or an  
33 alternative method approved by the executive secretary.

34 (2) Test procedures to determine compliance with R307-340  
35 must be approved by the executive secretary and must utilize one  
36 of the following methods or an alternative method approved by the  
37 executive secretary or equivalent method.

38 (a) For surface coatings: EPA Reference Method 24 of 40 CFR  
39 Part 60

40 (b) For add-on control equipment: EPA Reference Methods 1  
41 through 4, 18 and 25, of the 40 CFR Part 60;

42 (c) EPA 340/1-86-016 "A Guide for Surface Coating  
43 Calculations;" and

44 (d) EPA 450/3-84-019 "Procedures for Certifying Quantity of  
45 VOCs Emitted by Paint, Ink and Other Coatings."

46 (3) All tests shall be made by, or under the direction of, a  
47 person qualified by training or experience, or both, in the field  
48 of air pollution testing. The executive secretary will evaluate  
49 test data submitted.

50 (4) A person proposing to conduct a VOC emissions test shall  
51 notify the executive secretary of the intent to test not less than  
52 30 days before the proposed initiation of the test. The  
53 notification shall contain the information required by, and be in

1 a format approved by, the executive secretary.

2 (5) If add-on control equipment is used, continuous monitors  
3 of the following parameters shall be installed, periodically  
4 calibrated, and operated at all times that the associated control  
5 equipment is operating:

6 (a) Exhaust gas temperatures of all incinerators;

7 (b) Temperature rise across a catalytic incinerator bed;

8 (c) Breakthrough of VOCs on a carbon adsorption unit; and

9 (d) Any other continuous monitoring or recording device  
10 required by the executive secretary.

11 (6) The executive secretary may accept, instead of the  
12 testing required in R307-340-15, a certification by the  
13 manufacturer of the composition of the coatings if supported by  
14 actual batch formulation records. The owner or operator of a VOC  
15 source required to comply with R307-340 must obtain certification  
16 from the coating manufacturers that the test methods used for  
17 determination of the VOC content meet the requirements specified  
18 in (2) above. The owner or operator shall make this certification  
19 readily available to the Division of Air Quality to allow the  
20 results to be used in the daily compliance calculations specified  
21 in R307-340-4(5).

22 (7) The performance of add-on control equipment shall be  
23 demonstrated with the required test methods of (2) above at  
24 equipment start up and after any major modification to the control  
25 equipment. Baseline operating parameters shall be established  
26 during the satisfactory (i.e. in-compliance) operation of the  
27 control equipment, including operation during all anticipated  
28 ranges of process throughput. During subsequent process  
29 operation, the owner or operator shall maintain the operating  
30 conditions of the add-on controls as close to these baseline  
31 conditions as possible. If serious operational problems with an  
32 add-on control system are indicated by the daily monitoring  
33 required by R307-340-4(2)(d), (such problems may be indicated by  
34 changes from baseline conditions), repeat performance tests shall  
35 be performed by the owner or operator, and may be required by the  
36 executive secretary, as necessary.

37 (8) To determine compliance with the applicable standards in  
38 R307-340, samples shall be taken from the coating as freshly  
39 delivered to the reservoir of the coating applicator. All VOC  
40 emissions from solvent washing involved in a coating process shall  
41 be considered in determining compliance with an emission limit,  
42 unless the source owner or operator documents that the VOCs from  
43 solvent washing are collected and disposed of in a manner that  
44 prevents their evaporation into the atmosphere.

45

#### 46 **R307-340-16. Alternate Methods of Control.**

47 (1) Any person may apply to the executive secretary for  
48 approval of an alternate test method, an alternate method of  
49 control, an alternate compliance period, an alternate emission  
50 limit, or an alternate monitoring schedule. The application must  
51 include a demonstration that the proposed alternate produces an  
52 equal or greater air quality benefit than that required by R307-  
53 340, or that the alternate test method is equivalent to that

1 required by these rules. The executive secretary shall obtain  
2 concurrence from EPA when approving an alternate test method, an  
3 alternate method of control, an alternate compliance period, an  
4 alternate emission limit, or an alternate monitoring schedule.

5 (2) Manufacturer's operational specifications, records, and  
6 testings of any control system shall use the applicable EPA  
7 Reference Methods of 40 CFR Part 60, the most recent EPA test  
8 methods, or EPA-approved state methods, to determine the  
9 efficiency of the control device. In addition, the owner or  
10 operator must meet the applicable requirements of record keeping  
11 for any control device. A record of all tests, monitoring, and  
12 inspections required by R307-340 shall be maintained by the owner  
13 or operator for a minimum of 2 years and shall be made available  
14 to the executive secretary or the executive secretary's  
15 representative upon request. Any malfunctioning control device  
16 shall be repaired within 15 calendar days after it is found by the  
17 owner or operator to be malfunctioning, unless otherwise approved  
18 by the executive secretary.

19 (3) For purposes of determining compliance with emission  
20 limits, VOCs and nitrogen oxides will be measured by the test  
21 methods identified in federal regulation or approved by the  
22 executive secretary. Where such a method also inadvertently  
23 measures compounds with negligible photochemical reactivity, an  
24 owner or operator may exclude these negligibly reactive compounds  
25 when determining compliance with an emissions standard.

#### 26 27 **R307-340-16. Compliance Schedule.**

28 All sources within any newly designated nonattainment area  
29 for ozone shall be in compliance with this rule within 180 days of  
30 the effective date of designation to nonattainment.

31  
32 **KEY: air pollution, emission controls, surface coating, ozone**

33 **Date of Enactment or Last Substantive Amendment: 2007**

34 **Notice of Continuation: August 5, 2003**

35 **Authorizing, and Implemented or Interpreted Law: 19-2-104(1)(a)**