



State of Oregon
Department of
Environmental
Quality

State of Oregon Department of Environmental Quality

AQ211 Instructions

Surface Coating

Special rules may apply to surface coating operations depending on where the facility is located, the type of materials being coated, and the date that coating equipment was or will be installed at the facility. These rules include Reasonably Available Control Technology (RACT), New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Air Pollutants (NESHAP). In general, these rules limit the quantity of volatile organic compounds (VOC) that may be emitted per unit of coating. The information requested on this form will assist the applicant and DEQ in determining which rules, if any, apply to the facility. This form can be used to describe several types of activities, so you may find that some of the information requested is not pertinent to the operations at your facility. If a section of this form is not relevant, mark it as “not applicable” (NA) and move on to the next section.

General information:

1. What types of materials are coated or will be coated at the facility? Materials may include, but are not limited to metal cans, fabric, vinyl, paper, film, automobiles, trucks, metal furniture, appliances, metal parts, aerospace components, and wood furniture.
2. What type of coating equipment is used at the facility? Provide a detailed description including manufacturer, date installed, dimensions, and rated capacity.
3. What type of paint guns are used at the facility? If paint guns are not used at the facility, enter NA for “not applicable.”
4. How many paint booths are there and what were the dates that the paint booths were installed? If paint booths are not used at the facility, enter NA for “not applicable.”
5. Are powder coatings or other specialized coating processes used at the facility? If so, describe the coatings and processes.
6. Are there any add-on pollution control devices used at the facility? If so, complete an appropriate AQ300 series form and list the control device identification number(s) here.
7. If there are pollution control devices, are all of the pollutant emissions captured and treated by the control device (for example, an enclosed activity area that requires the emissions to exit through the control device)? If not, determine and provide the capture efficiency (CE) for each process/control device and explain how the CE was determined.
8. Have any pollutant emissions tests been performed on the equipment? If so, provide the results of the tests.
9. What system is used to minimize VOC emissions from the cleaning of coating equipment?

10. Are there any waste materials that contain VOC? If so, describe the method of disposal. If not, explain why not.
11. To your knowledge, have there been any odor or nuisance complaints received during the last two years. If so, list the complaints received.
12. Are there any boilers at the facility? If so, complete form AQ208 and list the boiler identification number(s) here.
13. Are there any curing ovens or dryers at the facility? If so, complete form AQ206 and list the identification number(s) here.
14. Are there any particulate emissions sources, including fugitive emission sources? If so, describe the fugitive emissions sources or complete an appropriate AQ200 series form to describe the source.
15. Provided the maximum projected operating schedule for the time periods indicated during the permit term.

Potential to emit:

DEQ has numerous rules that are triggered by a source's potential to emit. Potential to emit (PTE) generally means the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Some rules calculate PTE based on controlled emissions and some are based on uncontrolled emissions. PTE is calculated assuming that the facility will operate at the highest possible production rate for the maximum possible hours of operation per year. Generally, this is 8,760 hours per year minus down time for necessary maintenance and setup. PTE from coating operations can be limited by choke points in production of the items to be coated. For purposes of PTE, a year is considered to be any consecutive 12-month period.

1. What is the uncontrolled VOC PTE? Please include calculations and supporting assumptions on a separate sheet.
2. What is the controlled VOC PTE? Please include calculations and supporting assumptions on a separate sheet.
3. Are controls an integral part of the process (i.e., are the controls wired to always operate when the process is operating)? Do the controls have alarms to indicate if the system fails to maintain design efficiency?
4. What were the highest VOC emissions for a recent calendar year? What were the hours of production for that calendar year? How many shifts were operated? Was the facility operating at capacity for the production period?
5. If the VOC PTE is greater than 100 tons per year, the facility will be considered a major source and must either:
 - a. Reduce actual PTE to less than 100 tons per year,

- b. Take an operational limit to restrict PTE to less than 100 tons per year (complete form AQ105 and the appropriate form from series AQ300, if necessary), or
 - c. Obtain an Oregon Title V Operating Permit
6. What is the maximum single controlled hazardous air pollutant (HAP) PTE? (See List of Hazardous Air Pollutants in OAR 340-244-0040). If a single HAP annual PTE exceeds 10 tpy, what are the maximum projected single HAP annual emissions at the actual maximum projected operating rates?
 7. What is the total combined HAP controlled PTE? If your total controlled combined HAP exceeds 25 tpy, what are the maximum projected HAP annual emissions at the actual maximum projected operating rates?
 8. If the single HAP PTE is in excess of 10 tons per year, or combined HAP PTE is in excess of 25 tons per year, the facility will be considered a major source and must either:
 - a. Reduce actual PTE to less than threshold values,
 - b. Take an operational limit to restrict PTE to less than threshold values (complete form AQ105 and the appropriate form from series AQ300, if necessary), or
 - c. Obtain an Oregon Title V Operating Permit
 9. If there will be any changes in chemical usage or equipment changes during the next five years, re-answer questions 1, 2, 5, 6 and 7 based on the maximum possible operation after the changes.

Plant site emission limits:

Use form AQ401 and AQ402 to estimate the VOC emissions during the baseline period (1977 or 1978), if the facility existed during that time period, and the current or future emissions based on projected maximum production rates during the pending permit term. If the baseline emissions were determined for previous permitting actions, it is not necessary to recalculate the emissions, unless the information needs to be corrected based on new information.

Reasonably available control technology (RACT)

RACT is applicable to specific processes located in the Portland-Vancouver AQMA, Medford-Ashland AQMA, and Salem Area Transportation Study (SATS) Area. The following categorical RACT rules may be applicable to specific coating sources:

- OAR 340-232-0020: Non-categorical RACT
- OAR 340-232-0160: Surface Coating in Manufacturing
- OAR 340-232-0170: Aerospace Component Coating Operations
- OAR 340-232-0180 through 0200: Degreasers
- OAR 340-232-0210: Asphaltic & Coal Tar used for roof coating
- OAR 340-232-0220: Flat Wood Coating

1. Using the following information, determine which RACT requirements apply to the facility. If the facility is subject to one of these RACT rules, please answer the questions for that section.

Non-categorical RACT:

All existing sources operating prior to November 15, 1990 and in the areas listed above are subject to a source specific RACT determination if potential VOC emissions before add-on controls exceed 100 tons per year from aggregated, non-categorical RACT regulated emissions units. Answer the following questions for such source.

2. For each non-categorical RACT regulated emission unit, calculate the following:
 - a. Maximum projected actual hourly and annual VOC emissions,
 - b. Maximum projected actual hourly and annual VOC emissions before add-on controls,
 - c. Potential annual VOC emissions, and
 - d. Potential annual VOC emissions before add-on controls.
3. List the VOC content of each coating as applied.
4. If there are any VOC emissions control systems, list the identification numbers and fill out the appropriate AQ300 form.

Surface coating in manufacturing:

RACT is normally calculated as a daily average of all coating lines. The limit can be expressed as pounds of VOC emitted per gallon of coating less water and exempt solvents; or, the limit can be expressed as a presumptive RACT in pounds of VOC emitted per gallons of coating solids. Presumptive RACT is normally used when water based or powder coatings are used.

The Surface Coating in Manufacturing rule does not apply to airplanes painted out of doors in open air; automobile and truck refinishing; customized top coating of automobiles and trucks, if production is less than 35 vehicles per day; marine vessels and vessel parts painted out in the open air; flat wood coating; wood furniture and wood cabinets; wooden doors, moldings and window frames; machine staining of exterior wood siding; high temperature coatings (for service above 500°F); lumber marking coatings; potable water tank inside coatings; high performance inorganic zinc coatings, air dried, applied to fabricated steel; and markings by stencil for railroad cars. This RACT does not apply to sources whose VOC PTE from RACT regulated activities are less than 10 tons per year.

Coatings subject to Surface Coating in Manufacturing include:

- (a) Can coating
 - (A) Sheet basecoat (exterior and interior) and over-varnish; two-piece can exterior (basecoat and over-varnish), 2.8 pounds per gal.
 - (B) Two- and three-piece can interior and exterior body spray, two-piece can exterior and (spray or roll coat), 4.2 pounds per gal.
 - (C) Three-piece can side-seam spray, 5.5 pounds per gal.
 - (D) End sealing compound, 3.7 pounds per gal.
 - (E) End Sealing Compound for fatty foods, 3.7 pounds per gal.
- (b) Fabric Coating, 2.9 pounds per gal.
- (c) Vinyl Coating, 3.8 pounds per gal.
- (d) Paper Coating, 2.9 pounds per gal.

- (e) Existing Coating of Paper and Film in the Medford-Ashland AQMA, 55 pounds per gal of material per pass.
 - (f) Auto and Light Duty Truck Coating
 - (A) Prime, 1.9 pounds per gal.
 - (B) Topcoat, 2.8 pounds per gal.
 - (C) Repair, 4.8 pounds per gal.
 - (g) Metal Furniture Coating, 3.0 pounds per gal
 - (h) Magnet Wire Coating, 1.7 pounds per gal
 - (i) Large Appliance Coating, 2.8 pounds per gal.
 - (j) Miscellaneous Metal Parts and Products
 - (A) Clear Coatings, 4.3 pounds per gal
 - (B) Force Air Dried or Air Dried, 3.5 pounds per gal.
 - (C) Extreme Performance Coatings, 3.5 pounds per gal.
 - (D) Other Coatings (i.e. Powder, oven dried)
 - (E) High Performance Architectural Coatings, 3.5 pounds per gal.
5. For each coating used (including thinners), provide the information requested in the table on an as applied basis. The data for the gallons of solids is only needed if compliance is to be calculated on a gallons of solids basis.
6. If powder coatings are used, what is the theoretical coverage area for a gallon of coating at the regulatory limit and what is the percent of solids, by volume, of that theoretical coating?
7. Controls can be included in RACT compliance determination. If there are any VOC emissions control systems, list the identification numbers and fill out the appropriate AQ300 form.

Aerospace component coating operations:

The Aerospace Component Coating Operation rule does not apply the exterior of fully assembled airplanes painted out of doors, high temperature coatings (for conditions over 500°F), adhesive bonding primer, flight test coatings, and space vehicle coatings. This RACT does not apply to sources whose VOC PTE from RACT regulated activities is less than 10 tons per year.

Coatings subject to Aerospace Component Coating Operations include:

- (a) Primer, 2.9 pounds per gal.
- (b) Interior Topcoat, 2.8 pounds per gal.
- (c) Electric or Radiation Effect Coating, 6.7 pounds per gal.
- (d) Extreme Performance Interior Topcoat, 3.5 pounds per gal.
- (e) Fire Insulation Coating, 5.0 pounds per gal.
- (f) Fuel Tank Coating, 6.0 pounds per gal.
- (g) High Temperature Coating, 6.0 pounds per gal.
- (h) Sealant, 5.0 pounds per gal.
- (i) Self-Priming Topcoat, 3.5 pounds per gal.
- (j) Topcoat, 3.5 pounds per gal.
- (k) Pretreatment Wash Primer, 3.5 pounds per gal.
- (l) Sealant Bonding Primer, 2.1 pounds per gal.
- (m) Temporary Protective Coating, 2.1 pounds per gal.

8. For each coating used, provide the information requested in the table on an as applied basis.
9. If powder coatings are used, what is the theoretical coverage area for a gallon of coating at the regulatory limit and what is the percent of solids, by volume, of that theoretical coating?

Degreasers:

10. What types of degreasers are used (e.g., cold cleaners, open top, or conveyORIZED)? When were they installed (month and year)? What types of solvents are used (list chemical names) if any?

Flat wood coating:

This rule applies to all flat wood manufacturing and surface finishing facilities that manufacture the following products:

- (a) Printed interior panels made of hardwood plywood and thin particle board;
- (b) Natural finish hardwood plywood panels; or
- (c) Hardboard paneling with Class II finishes.

This rule does not apply to the manufacture of exterior siding, tileboard, particleboard used as a furniture component, or paper or plastic laminates on wood or wood-derived substrates.

Coating activities subject to the flat wood coating rule include:

- (a) Printed interior panels, regardless of the number of coats applied (limit: 6.0 pounds per 1000 square feet).
 - (b) Natural finish hardwood plywood panels, regardless of the number of coats applied (limit: 12 pounds per 1000 square feet).
 - (c) Class II finishes on hardboard panels, regardless of the number of coats applied (limit: 10.0 pounds per 1000 square feet).
11. For each coating used, provide the information requested in the table on an as applied basis.

New source performance standards (NSPS):

12. Using the following information, determine which NSPS requirements apply to the facility. If the facility is subject to one of these NSPS rules, please answer the questions for that section.

Surface Coating of Metal Furniture, OAR 340-238-0600 and 40 CFR Part 60, Subpart EE:

Applicability: Standards of Performance for Metal Furniture Surface Coating apply if the facility is a metal furniture surface coating operation in which organic coatings are applied and for which construction, modification, or reconstruction commenced after November 28, 1980.

Complete the following section for such operations. Annual refers to any 12 consecutive month period.

13. Have any paint lines or paint booths been constructed, modified, or reconstructed since November 28, 1980? If so, list specific line/booth and date of construction, modification, or reconstruction.
14. What was the highest annual volume of coating used, as applied, over the last 2 years?
15. What is the projected maximum annual volume of coating to be used, as applied, for each of the next 5 years?
16. If any line or booth was constructed, modified or reconstructed since November 28, 1980 and if the volume of coating, including thinners, used or projected to be used in the surface coating operation, exceeds 1,015 gallons (3,842 liters) for any 12 consecutive month period, provide the information requested in the table.

Automobile and Light duty Truck Surface Coating Operations OAR 340-238-0600 and 40 CFR Part 60 Subpart MM:

Applicability: Standards of Performance for Automobile and Light duty Truck Surface Coating applies to assembly plants for which construction, reconstruction, or modification commenced after October 5, 1979. Plastic body components are exempted from this NSPS.

- (A) Each prime coat operation;
- (B) Each guide coat operation; and
- (C) Each topcoat operation.

Contact DEQ for additional instructions for such operations.

Tape and Label Surface Coating: OAR 340-238-0600 and 40 CFR Part 60, Subpart RR:

Applicability: Standards of Performance for Tape and Label Surface Coating apply to each coating line used in the manufacture of pressure sensitive tape and label materials for which construction, modification, or reconstruction commenced after December 30, 1990. Contact DEQ for additional instructions for such operations.

Industrial Surface Coating: Large Appliances: OAR 340-238-0600 and 40 CFR Part 60, Subpart SS:

Applicability: Standards of Performance for Industrial Surface Coating: Large Appliances applies to each surface coating operation in a large appliance surface coating line for which construction, modification or reconstruction commenced after December 24, 1980. Contact DEQ for additional instructions for such operations.

Metal Coil Surface Coating: OAR 340-238-0600 and 40 CFR Part 60, Subpart TT:

Applicability: Standards of Performance for Metal Coil Surface Coating apply to the following facilities in a metal coil surface coating operation for which construction, modification or reconstruction commenced after January 5, 1981:

- (a) Each prime coat operation;
- (b) Each finish coat operation; and
- (c) Each prime and finish coat operation combined when the finish coat is applied wet on wet over the prime coat and both coatings are cured simultaneously.

Contact DEQ for additional instructions for such operations.

Beverage Can Surface Coating Industry: OAR 340-238-0600 and 40 CFR Part 60, Subpart WW:

Applicability: Standards of Performance for the Beverage Can Surface Coating Industry applies to the following facilities in beverage can surface coating lines for which construction, modification, or reconstruction commenced after November 26, 1980:

- (a) Each exterior base coat operation;
- (b) Each over varnish coating operation; and
- (c) Each inside spray coating operation.

Contact DEQ for additional instructions for such operations.

Flexible Vinyl and Urethane Coating and Printing: OAR 340-238-0600 and 40 CFR Part 60, Subpart FFF:

Applicability: Standards of Performance for Flexible Vinyl and Urethane Coating and Printing apply to each rotogravure printing line used to print or coat flexible vinyl or urethane products for which construction, modification, or reconstruction commenced after January 18, 1983. Contact DEQ for additional instructions for such operations.

Magnetic Tape Coating Facilities: OAR 340-238-0600 and 40 CFR Part 60, Subpart SSS:

Applicability: Standards of Performance for Magnetic Tape Coating Facilities apply to each coating operation and each piece of coating mix preparation equipment for which construction, modification, or reconstruction commenced after January 22, 1986. Contact DEQ for additional instructions for such operations.

Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines: OAR 340-238-0600 and 40 CFR Part 60, Subpart TTT:

Applicability: Standards of Performance for Surface Coating of Plastic Parts for Business Machines applies to each spray booth in which plastic parts for use in the manufacture of business machines receives prime coats, color coats, texture coats, or touch-up coats for which construction, modification, or reconstruction commenced after January 8, 1986. Complete the following section for such operations.

- 17. Have any paint lines or paint booths been constructed, modified, or reconstructed since November 28, 1980? If so, list specific line/booth and date of construction, modification, or reconstruction.
- 18. For each coating applied in an NSPS line/booth, supply the following information requested in the table.

Polymeric Coating of Supporting Substrates Facilities: OAR 340-238-0600 and 40 CFR Part 60, Subpart VVV:

Applicability: Standards of Performance for Polymeric Coating of Supporting Substrates Facilities apply to each coating operation and any on-site coating mix preparation equipment used to prepare coating for the polymeric coating of supporting substrates for which construction, modification, or reconstruction commenced after April 30, 1987. Contact DEQ for additional instructions for such operations.

National Emission Standards for Hazardous Air Pollutants (NESHAPs):

19. Using the following information, determine which NESHAP requirements apply to the facility (this list is not exhaustive, the facility should review the list of adopted NESHAPs within OAR chapter 340 division 244).

Applicability: The following NESHAPs, adopted by reference in OAR 340-244-0220, may be applicable to some coating operations. Some of these NESHAPs only apply to plant sites that are major HAP sources (subparts N and T apply to both major and area HAP sources). A major HAP source has the potential to emit 10 tons or more of any single HAP or 25 tons or more of all combined HAPs. A plant site for the purposes of the NESHAP program includes contiguous facilities under common control. Plant sites that perform an operation covered by a NESHAP that are exempted from that NESHAP are required to maintain records to demonstrate that they are exempt from the specific NESHAP.

40 CFR Part 63, Subpart N: Hard and Decorative Chromium Electroplating and Chromium Anodizing
40 CFR Part 63, Subpart T: Halogenated Solvent Cleaning
40 CFR Part 63, Subpart EE: Magnetic Tape Operations
40 CFR Part 63, Subpart GG: Aerospace Manufacturing and Rework Facilities
40 CFR Part 63, Subpart II: Shipbuilding and Ship Repair Operations
40 CFR Part 63, Subpart JJ: Wood Furniture Manufacturing Operations
40 CFR Part 63, Subpart III: Surface Coating of Automobiles and Light-Duty Trucks
40 CFR Part 63, Subpart JJJ: Paper and Other Web Coating
40 CFR Part 63, Subpart KKKK: Surface Coating of Metal Cans
40 CFR Part 63, Subpart MMMM: Surface Coating of Miscellaneous Metal Parts and Products
40 CFR Part 63, Subpart NNNN: Surface Coating of Large Appliances
40 CFR Part 63, Subpart OOOO: Printing, Coating, and Dyeing of Fabrics and Other Textiles
40 CFR Part 63, Subpart PPPP: Surface Coating of Plastic Parts and Products
40 CFR Part 63, Subpart QQQQ: Surface Coating of Wood Building Products
40 CFR Part 63, Subpart RRRR: Surface Coating of Metal Furniture
40 CFR Part 63, Subpart SSSS: Surface Coating of Metal Coil
40 CFR Part 63, Subpart VVVV: Boat Manufacturing
40 CFR Part 63, Subpart HHHHHH: Area Source Paint Stripping and Miscellaneous Surface Coating Operations
40 CFR Part 63, Subpart WWWW: Area Sources of Plating and Polishing Operations
40 CFR Part 63, Subpart XXXXXX: Area Sources of Nine Metal Fabrication and Finishing Source Categories

Contact DEQ for additional instructions for such operations.

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.