

AIR POLLUTION CONTROL DISTRICT
REGULATORY COMPLIANCE DIVISION

POLICIES AND PROCEDURES

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Topic: Surface Coatings

Distribution: All Policy Holders

This Policy and Procedure document provides guidance to inspectors in the procedures to be used in conducting an inspection of a surface coating operation.

PROCESS DESCRIPTION

Surface coating operations involve the application of wet or dry coating material to a substrate. The substrate may include metal, wood, paper, plastic and architectural structures.

Wet surface coatings consist of solids and liquids. Solids are in the form of resins, pigments and extenders. Liquids are in the form of solvents and diluents. The solvents and diluents of a coating may consist of water or a number of organic compounds. Solvents act as carriers for the solid portion of the coatings. Diluents (thinners) are used to lower the viscosity of the coating to aid in its application to the substrate. Solvents and diluents evaporate from the coating after it has been applied to a substrate, leaving either a hard protective coating or a penetrable coating.

Coatings may be applied by brushing, spraying or dipping. The most common coating operations include auto body repair and painting, metal parts manufacturing, architectural painting, furniture refinishing and painting, industrial equipment maintenance, decorative painting, sign manufacturing, silk screening, road and curb striping, marine vessel painting and various waterproofing applications.

Emissions from coating operations result from the evaporation of organic compounds in the coating and particulate over-spray emissions from spray applications. Over-spray is controlled by either conducting the coating application within an enclosure equipped with a filtered exhaust system, or by using electrostatic application techniques. During electrostatic spray operations, the item to be coated (substrate) is grounded while the paint is given an induced negative charge at the spray applicator. The negatively charged solids in the coating are electrostatically attracted to the grounded substrate.

The emission of volatile organic compounds (VOC) from coating operations is controlled by either decreasing the amount of VOCs in the coating and/or by increasing the transfer efficiency of the application process. For a detailed explanation of control techniques, please refer to the Air Resources Board Compliance Assistance Program Manual for Surface Coating Operations.

Other sources of evaporative VOC emissions are the disposal of waste or clean-up solvents and the wipe-cleaning preparations of substrates. Emissions from these operations are controlled by keeping all solvents in sealed containers when not in use, using spray gun cleaning units which conserve the cleaning solvents and using solvent stills to recycle waste cleaning solvents. Many facilities will dispose of solvent wastes via a hazardous waste hauler. All wastes and cleaning solvents should be stored in a manner which will prevent evaporation.

RULES:

Surface coating operations are regulated by five District Rules: Rule 317 (Organic Solvents), Rule 322 (Metal Surface Coating Thinner and Reducer), Rule 323 (Architectural Coatings), Rule 324 (Disposal and Evaporation of Solvents) and Rule 330 (Surface Coating of Manufactured Metal Parts).

Rule 317 limits the total allowable emissions of organic materials into the atmosphere. Rule 322 limits the types of thinners and reducers which can be added to coatings used to paint metal surfaces. Rule 323 limits the amount of VOCs allowed in paint which is applied to stationary structures. Rule 324 limits the amount of solvent which may be disposed of by evaporation. Rule 330 limits the VOCs allowed in coatings applied to manufactured metal parts and stipulates the transfer efficiency provided by any application equipment used in such an operation.

INSPECTION PROCEDURE:

Due to the wide variation in types and sizes of surface coating operations and the variations between different Rules which apply to them, the inspection procedures will vary from source to source. However, many of the elements of inspections of surface coating facilities may be generalized. The inspector will review each permit prior to any inspection to determine what specific rules and conditions apply to each specific operation. The inspector should use the following procedure when inspecting a surface coating operation:

1. File Review
 - A. Review past inspection reports and enforcement actions.
 - B. Review all Permit Conditions.
 - C. Verify that annual reports have been received.
 - D. Review process description to determine which rules apply to the facility being inspected.

2. Checklist Preparation
 - A. Use the Surface Coating Inspection Checklist (Enf-23)
 - B. Complete the top portion of page one of the checklist and, using the description on the permit, complete the portions of the checklist entitled "Equipment."

- C. In the portion of the checklist entitled "Conditions," fill in any source specific conditions not included in the generic portion of the checklist.
 - D. In the portion of the checklist entitled "Rules," fill in all rules which may apply to the facility.
3. Obtain access to the facility using the procedures outlined in Policy Number I.B., Access to the Facility.
 4. Conduct a pre-inspection interview with the facility operator
 - A. Verify that the permit is posted or readily available.
 - b. Verify that materials use logs are maintained.
 - C. Verify hazardous waste manifest (if applicable).
 - D. Discuss permit conditions.
 5. Inspect Surface Coating operation and equipment:
 - A. Verify that equipment is same as described on permit; note any discrepancies.
 - B. Verify that operation is same as described on PTO; note any discrepancies.
 - C. Inspect substrate preparation area to verify compliance with degreasing and abrasive blasting regulations.
 - D. Inspect mixing area:
 - 1) Determine the coating/thinner ratio.
 - 2) Determine the method used to measure viscosity.
 - 3) Take sample(s) for determination of viscosity if necessary (use procedure stipulated in Policy Number III.B.2, Sampling).
 - 4) Determine the range of various mixing ratios and if mixing ratios vary according to ambient humidity.
 - E. If coating is conducted in containment equipped with filtered exhaust system, inspect the enclosure:
 - 1) Verify that filters are installed and are in good condition.
 - 2) Inspect manometer which measures pressure drop across filters.
 - a) Verify that manometer has fluid.
 - b) Verify that pressure drop across filters does not exceed 2.5 inches of water.
 - 3) Verify that overspray is drawn into the filter bank.
 - F. Inspect materials inventory and verify compliance with applicable VOC content and formulation limits.
 - 1) Take a sample if necessary to determine compliance (use procedure stipulated Policy Number III.B.2, Sampling).
 - 2) Request Manufacturers' Safety Data Sheets (MSDS) if they are not already in the District file.
 - 3) Verify that all materials which contain VOCs are stored in sealed containers.
 - G. If transfer efficiency technology is required, verify that it is being used properly.
 - 1) Verify that proper voltages on any electrostatic spray or electrodeposition process, if any, are stipulated in the permit conditions.

- 2) Verify that airless-type spray guns are being used if airless spray is required.
 - 3) Determine if air or turbine pressure is within appropriate range, if so stipulated in the permit.
- H. Inspect waste storage area:
- 1) Determine that all volatile materials are stored in sealed containers.
 - 2) Verify that solvents are not disposed of in dumpsters or drains that are designed for non-hazardous waste.
- I. Inspect outside of surface coating enclosure:
- 1) Conduct VEE of any exhaust stack.
 - 2) Determine if there is any visible evidence of overspray outside the surface coating enclosure.
- J. Inspect the areas where there may be unconfined applications of coatings:
- 1) Determine if overspray is escaping property boundaries.
 - 2) Determine the potential for public nuisance as a result of solvent odors.
 - 3) Determine if unconfined coating operations are permitted in the permit.

DOCUMENTATION:

The inspector will document the inspection and any violations observed using the procedures outlined in the Policy Number I.F., Inspection Report, and Policy Number VII.A., Notice of Violation.

SURFACE COATING FACILITY
INSPECTION CHECKLIST

FACILITY _____ INSPECTION DATE _____

LOCATION _____

CONTACT _____ TITLE _____

PHONE _____ ATC/PTO _____ ID _____

EQUIPMENT DESCRIPTION:

PERMIT CONDITIONS:

APPLICABLE RULES:

DESCRIPTION OF PROCESS:

	Y	N
Permit posted or accessible	___	___
Material use records available	___	___
Hazardous Waste Manifest available	___	___
Changes to equipment	___	___
Changes to operation	___	___
Substrate preparation		
Solvent wipe	___	___
Solvent used	_____	
Sand blasting	___	___
Chemical abrasive	___	___
Other abrasive techniques	___	___

Materials mixing: Hours of operation (Hrs/Day): _____

Reduction ratio (coating : reducer)

Material	Ratio
_____	_____
_____	_____
_____	_____
_____	_____

Y. N

Thinners and reducers non-photochemically reactive? _____
 Data obtained _____

COATING OPERATIONS

Method of Application

Air assisted spray	___
Airless spray	___
Dipping	___
Brushing	___
Electrodeposition	___

Hours of Operation: (Hrs/Day) _____

Maximum Coating Use Rate (gal/hr) _____

Transfer Efficiency Technology Used

	Y	N
Type _____	___	___
Electrostatic spray voltage _____		
Electrodeposition voltage _____		
Turbine pressure _____		

Filtered Exhaust Enclosure

Filters in place	___	___
Filters in good condition	___	___
Type of filter medium _____		
Manometer installed	___	___

Pressure differential (inches of water)	Y	N
Exhaust fan operational	___	___
Fan power has sufficient draw	___	___
Evidence of overspray outside	___	___
All coating done within enclosure	___	___

MATERIALS AND WASTE STORAGE

VOC Content of Materials in Compliance	___	___
Samples? (attach copies of sample forms)	___	___
Product Information Sheets Acquired	___	___
All Materials Stored in Sealed Containers	___	___
VOC Containing Waste Recycled on Site	___	___
Amount of Solvent Reclaimed (gals/month)	_____	
VOC Containing Wastes Hauled Away	___	___

Name of hauler _____

Last Hazardous Waste Manifest Number _____

Amount of Waste Removed (gals/month) _____

