

**SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL DISTRICT
COMPLIANCE DEPARTMENT**

COM 2185

APPROVED: Signed **DATE:** December 28, 2006
 Jon Adams
 Director of Compliance

TITLE: **RULE 4603 - SURFACE COATING OF METAL PARTS AND PRODUCTS**

SUBJECT: **DETERMINATION OF COMPLIANCE WITH RULE 4603**

OBJECTIVE:

Rule 4603 limits VOC emissions from the coating of metal parts and products and from organic solvent cleaning and storage and disposal of paints, solvents and waste solvent materials associated with coating activities. The rule sets forth requirements for application equipment, VOC concentration limits in coatings, solvents, and record keeping. This policy should be used to ensure that compliance staff uniformly interprets the requirements of the rule during the inspection of Metal Parts & Products facilities.

PURPOSE:

To establish District policy and procedures for implementation of Rule 4603 - Surface Coating of Metal Parts and Products.

POLICY STATEMENT:

District staff will enforce Rule 4603 and permit conditions pertaining to the discharge of VOC emissions from metal parts and products coating operations. Failure to comply with the requirements of this rule is a violation and may subject the source to enforcement actions. Specific sources may be permitted with special conditions more restrictive than those required under Rule 4603. At the conclusion of the inspection, the facility owner/operator should have sufficient understanding of the rule to enable them to maintain continued compliance at their facility.

I. GENERAL GUIDELINES

Each facility should be inspected at least once each year, or according to an alternate inspection frequency as approved by a compliance supervisor. **Follow the guidelines in the General Inspection Policy for the following areas, in addition to the procedures listed below:**

A. Inspection Assignments

B. Complaint Assignments

Complaints against facilities engaged in surface coating of metal parts and products will be assigned to the area inspector for investigation. The area inspector will investigate all aspects dealing with the complaint. Common complaints are paint fallout or over-spray, and paint or solvent odors.

In addition to completing the complaint assignment, any suspected permit or 4603 violation should be referred to the area inspector assigned to the facility for follow-up.

C. Pre-Inspection Procedures

1. Gather any necessary forms and equipment needed to conduct the inspection, a copy of Rule 4603 and inspection forms, blank VOC log sheets, proper safety equipment, etc.

II. PERMIT REQUIREMENTS

A. General

1. Facilities engaged in surface coating of metal parts and products are required to have an Authority to Construct and Permit to Operate unless otherwise exempted.
2. All surface coating operations (except powder coating operations) that use more than one quart or more of coating per day, or more than eight gallons or more of coating per year are required to be permitted. Facilities that use more than eight gallons per year of VOC are required to be permitted. Any 24-hr period in which a facility exceeds the "1 quart" limit, and the exemption from permitting becomes void.
3. For facilities involved with emissions of "HAPS", District Permit Services should make a determination of permit requirements.
4. Powder Coating operations that use more than five pounds of material per day, or more than 50 pounds of coating per year

5. Original Equipment Manufacturers (OEMs) are subject to Rule 4603.

B. Exemptions

- As of November 15, 2002, an owner/operator may use up to 55 gallons of coatings that exceed the VOC content limits, as applied, at a stationary source, in all operations, in each rolling, consecutive 365-day period. All other provisions of the rule, including application methods and administrative requirements, shall apply to the use of such exempt coatings.
- Sources must keep sufficient records to validate their permit exempt status. Sources losing their exempt status are required to comply with all requirements of the rule. Notices of violation will be issued if the inspector discovers that the exemption has been lost.
- Touch-up and repair are exempt for the requirements of Rule 4603.
- Any source subject to and in full compliance with Rule 4603 shall be exempt from otherwise applicable portions of Rule 4661 (Organic Solvents).
- This rule does not apply to polyester resin operations and the application of polyester resin materials to metal parts and products.
- The requirements of this rule shall not apply to the application of coatings to aircraft, aerospace vehicles, marine vessels, can, coils, and magnetic wire.
- The provisions of this rule shall not apply to an operation subject to the requirements of Rule 4602 (Motor Vehicle and Mobile Equipment coating Operations).
- For existing stationary sources, if an incineration device is added or modified for the sole purpose of complying with the requirements of this rule, such a device shall be exempt for the Best Available Control Technology and the offset requirements of Rule 2201.

C. Violations

A NOV shall be issued for:

1. Lack of PTO/ATC or modifications without an ATC.

2. Violations of PTO/ATC conditions.
3. Violations of Rule 4603.

In order to provide compliance assistance to facilities in violation of permit requirements, the inspector should refer the source to the regional small business assistance office. Inspectors shall not accept permit applications and/or application fees.

D. Permit Conditions

Typical permit conditions are record keeping requirements, coating/solvent usage limitations, daily emission limits for VOCs (DEL), and use of filters in the spray booth when operating.

In order to change a permit condition, a facility must submit a new permit application to the Permit Services Division along with a request for the desired permit change.

If the permit condition has requirements or standards similar to those in Rule 4603, the inspector will enforce the more stringent standard or requirement. If the permit condition references or essentially quotes the regulation, the NOV will be issued for a violation of both Rule 2070 and Rule 4603.

III. INSPECTION PROCEDURES

A. General

Upon arrival at the facility, identify yourself, contact the person in charge, and give the operator your business card. Advise the operator of the purpose of the inspection and explain that they will be advised of the results upon completion of the inspection.

The suggested inspection sequence for 4603 facilities is as follows (detailed inspection methods are located later in the policy):

1. Determine if facility has or is required to have a Permit to Operate. For permitted facilities, determine if the PTO is onsite and discuss the permit conditions with the contact.
2. Determine if the paint booth is in use at the time of the inspection. If it is in use, perform a VEE to document compliance/non-compliance with the permit limit. The visible emission limit is 20% opacity unless otherwise specified on the PTO. Inspect the booth's exhaust filters to ensure that they are in place. Filters are commonly a permit requirement, and missing filters during operation could be a permit violation. Look for a manometer (if one is required on the permit) and note the pressure differential value

while the paint booth is operating.

6. Verify that the application methods used at the facility are compliant with the permit and the rule.
7. Verify that all fugitive emission sources, including paint guns, gun cleaners, paint, waste paint, solvent and rag storage areas have sealed/closed containers. Note: Storing solvent in the paint gun cup is not an acceptable practice unless the solvent is acetone or water.
5. Determine the method used for spray equipment clean up. Check the gun cleaning solvent for VOC compliance. If the source is using acetone as their gun cleaning/wipe solvent, the facility will not be required to have a gun cleaner, since acetone is an exempt solvent. Acetone is also exempt from record keeping requirements. Keeping an open container of solvent available for brush cleaning is not acceptable- unless the solvent is acetone or water.
6. Determine whether coatings are baked-on, air-dried, or are specialty coatings and review applicable VOC information. Ask the operator for the location of the paint locker, and inspect the paints they are using at the facility for compliance with the applicable VOC limits. Sometimes shops allow their customers to supply their paint, and compliance with the rule limit may require a closer review.
7. Ask if the facility has a solvent recycling, solvent distiller, or solvent minimizer device. See Appendix A for information on verifying compliant use of this device.
8. Review coating records and solvent records for compliance with the permit DEL limits.
9. Conduct post inspection meeting with owner/operator.

B. Equipment Identification

Permit Services engineering evaluations generally describe permissible equipment and the associated District rules. Determine whether the equipment on site meets the specifications in the permit. New spray equipment and gun cleaners do not require permit changes.

C. Application Equipment Requirements

All coating must be applied using spray equipment that is either an electrostatic application, electro deposition, High Volume Low Pressure (HVLP), flow coating, roll coating, dip coating, brush coating or continuous coating.

If any other type of application system than referenced above is used or if improper operation is observed, such that the transfer efficiency is reduced, a violation notice will be issued.

1. HVLP-High Volume, Low Pressure

The spray guns must be operated in accordance with the manufacturer's recommendations. HVLP guns must have a fluid operating pressure between 0.1 and 10 psi at the nozzle. Because of the diverse configuration of HVLP models, it may not be visually possible to verify if a spray gun is an approved HVLP model. Most of the current spray gun manufacturers have HVLP stamped onto the body of their spray gun or inscribed onto the spray nozzle itself.

If the spray gun has no visual indications of "HVLP" ask the facility to provide documentation (manufacturers literature) that the gun has a minimum of 65% transfer efficiency.

The following non-HVLP spray guns have been determined by Permit Services to meet the 65% transfer efficiency:

- a. DeVilbiss- 670 (Plus)
- b. SATAjet RP
- c. SATAjetRP Digital 2

For HVLP guns manufactured prior to January 1, 1996, the user shall demonstrate that the gun meets HVLP standards. This may be demonstrated by published technical material, demonstration by performing pressure tests, etc.

If non-complying HVLP equipment use is confirmed, the inspector will issue an NOV.

2. Electro deposition

A dip coating application method wherein the coating is given an electrical charge and is then attracted to a substrate.

3. Electrostatic

Electrostatic application uses low amperage, direct current transmitted through an electrical cable to the spray gun equipped with an electrode that

charges the atomized paint.

4. Flow Coating

A coating application system where a coating flows over the part and the excess coating drains back into the collection system.

5. Roll Coating

The application of coatings to a flat surface by a mechanical series of rollers.

6. Dip Coating

The process in which a substrate is immersed in a solution (or dispersion) containing the coating material, and then withdrawn.

7. Brush Coating

Manual application of coatings using brushes or rollers.

8. Continuous Coating

An enclosed coating system where spray nozzles coat metal parts and products as they are conveyed through the enclosure. Water wash zones control the inlet and outlet of the enclosure.

D. Organic Solvents Used in Cleaning Operations:

The VOC limits for solvents used in surface preparation, solvent cleaning, and equipment cleanup are found in Rule 4603, Table 2. Please note that the solvent limits are specified as weight per volume of material or “material VOC” and therefore, the actual VOCs may be diluted to meet the VOC limits specified in the rule. This stated, solvents must comply with the following:

1. Clean-up and surface preparation solvents are limited to 0.42 lb/gal (50 grams/liter). Fresh or spent solvents, coating, adhesives, catalysts, reducers and cloth or paper contaminated with these solvents must be stored and/or disposed of in closed, non leaking, non absorbent containers.

2. Clean up of Coating Application Equipment- All cleaning activities related to spray equipment clean up must be done in the gun cleaner. The solvents used for this purpose are required to have VOCs no higher than 4.6 pounds/ gallon (550 grams/liter). Enclosed gun cleaners must be kept closed when they contain solvent, except to load or unload guns and equipment. Acetone or water are exempt solvents that can be used to clean spray equipment without the use of an enclosed gun cleaner.
3. Cleaning activities that use organic solvents that exceed .42 lb/gal (50 grams/liter) must be performed by one of the following methods:
 - a. wipe cleaning where solvent is sprayed on a rag or on surface to be cleaned.
 - b. application of solvent from non-aerosolized hand-held spray bottles (no propellant- induced force)
 - c. solvent flow/flushing method in an enclosed device.

A NOV will be issued for non-compliance with this section.

Section 5.5.4 through 5.5.5 of the Rule contains solvent use exceptions to Table 2. These exceptions are application/source specific and should be reviewed prior to issuing an NOV for use of organic solvents in cleaning activities.

E. Coating Standards:

The VOC limits in the current Rule 4603 shall be enforced unless the facility has a permitted VOC control device (such as a thermal oxidizer).

Compliance with coating VOC limits will be determined through review of facility records and an inspection of the coatings in use at the facility. In the case where no documentation for a particular coating is available, a NOV shall be issued for the records violation. Samples may be taken to verify the VOC content of any questionable coating. Samples will be taken in accordance with District policy and with Supervisor authorization. See Appendix B for more information on field VOC calculations for compliance determination.

F. Other Standards

1. Prohibition of Specifications -

No person/customer shall specify the application of a coating when the use of it will result in a violation of Rule 4603.

2. Labeling Requirements

Each container or data sheet for any coating subject to this rule and manufactured after April 11, 1992, shall display the maximum VOC content of the coating, as applied, and after any thinning as recommended by the manufacturer.

If it appears that a manufacturer is not providing the VOC content information to the facility, fully investigate and document the situation. NOV's to coating manufacturers and/or distributors require prior approval of the supervisor.

For the determination of compliance and enforcement of the limits specified in Section 5.0 (General Limits) of Rule 4603, the VOC content of any coating determined to exceed its applicable limit (through the use of either product formulation data or the test method in Section 6.3.1 of Rule 4603) shall constitute a violation of this rule.

3. Mixing/Thinning Recommendations

Each container or data sheet shall display a statement of the manufacturer's recommended mixing/thinning ratios. This requirement does not apply to thinning with water.

V. COATING RECORDS

A. Records Required

Any person subject to Section 5.0 of Rule 4603 shall comply with the following requirements:

The source shall maintain a current list of coatings and solvents in use that contains all data necessary to evaluate compliance, including the following, as applicable:

- Mix Ratio of components used.
- VOC content of coatings, catalysts and reducers.
- VOC content of solvents used for preparation and cleanup.
- Quantity of each coating used.
- VOCs emitted in lb/day if facility has a DEL (daily emission limit).

These records may be kept in either grams/liter or pounds/gallon. Facilities shall maintain these records on a daily basis and shall be retained for the previous 24-month period, or other time period specified by the PTO.

Sources claiming exemption from the rule shall maintain records such that the records substantiate coatings usage of less than 1 quart/day or 8 gallons per year.

Note: According to Rule 4603 exemptions, the facility is allowed to use up to 55 gallons per year of coatings that exceed the VOC limits of the rule. If the owner has multiple facilities in the District, the 55-gallon limit is shared with all Rule 4603 sources in the District for each rolling 365-day period. Use of non-compliant coatings must be recorded/documentated for the facility to be in compliance.

B. Records Evaluation

The following should be included in an evaluation of records in order to determine compliance with the record keeping section.

1. Manufacturer's information sheets should provide specifications for all products in use at the facility.
2. Computer-based record keeping systems should be spot checked for accurate VOC data and mix ratios.
3. Daily coating records should be spot checked to determine if coatings meet the requirements of the rule. A more comprehensive review should be initiated if problems are found during the spot check.
4. Verify that records of surface preparation and cleanup solvents are being maintained.
5. Check for violations of daily emission limits.

C. Records Not Immediately Available

When records are known to exist at the time of inspection but cannot be produced because: knowledgeable personnel are not present, records are temporarily elsewhere, computer failure, or other good reasons, the inspector will advise the owner/operator of the need to have records readily available. If the records are not available, the facility will provide records to the inspector within three (3) working days. If the records are not produced within this time, a **NOV** will be issued.

D. Minor Record Keeping Errors and Omissions

An NTC shall be issued for minor record keeping errors and omissions. If similar errors are found during subsequent inspections a NOV shall be issued.

E. Records Not Kept

A NOV should be issued for failure to keep records. In cases where no records are kept, the inspector will take alternate steps to determine compliance with the coating standards. These steps may include, but are not limited to, the inspection of purchase records, production records, supplier documents, etc. If compliance cannot be determined, samples of questionable coatings should be taken and a NOV should be issued for failure to maintain adequate records.

VI. POST INSPECTION PROCEDURES

The following elements should be covered with the owner/operator in a post inspection meeting.

- a. Discuss the overall condition of the facility and equipment.
- b. Review applicable rules and advise the source of any rule changes or upcoming VOC limitations.
- c. Review all PTOs and ATCs, including the need for proper posting and to comply with appropriate conditions. Discuss how to correct permit conditions that need to be changed.
- d. Review results of the equipment inspection and the storage of coatings, adhesives, solvents and rags.
- e. If coating samples were taken, advise the source of possible enforcement actions if any coating is found to be non-complying.
- f. Review records evaluation, advise source of any deficiencies, and discuss improvement areas.
- g. Issue appropriate NOV/NTC and review compliance options.
- h. Advise source of District procedures applicable to any new equipment or modifications to permitted equipment.
- i. Provide compliance assistance information as necessary, including District web site address, pamphlets, appropriate rule copies, and Air Resources Board (ARB) brochures. Make appropriate recommendations to improve compliance and to facilitate future inspections.

“The goal of a successful compliance inspection is to ensure that the owner/operator has sufficient information and understanding of the regulations to maintain continued compliance”