

I. GENERAL GUIDELINES

Each facility should be inspected at least once each year, or according to an alternate inspection frequency as approved by a 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

Common complaints are; spray painting in residential areas, painting overspray, and paint or solvent odors. In many areas of our District, the responsible Fire Department prohibits indoor painting without a spray booth. If the inspector suspects a Fire Department violation, the complaint should also be referred to the appropriate department. City or County Business License departments can also be contacted to report situations that appear to be a commercial business being operated from a home. Appendix A contains a form letter that can be used to inform residents of the District's policy on residential motor vehicle spray painting.

C. Pre-Inspection Procedures

Gather any necessary inspection forms and equipment needed to conduct the inspection i.e., proper safety equipment, a copy of Rule 4602, blank VOC record keeping forms, ATC/PTO application packets, and facility self-inspection handbooks.

II. PERMIT REQUIREMENTS

A. Applicability

Motor vehicle and mobile equipment refinishing facilities are required to have an Authority to Construct and Permit to Operate unless otherwise exempted by Rule 2020. Any person who applies more than 1 quart of coating per day or more than 8 gallons of coating per year is subject to Rule 2020.

B. Exemptions

Surface coating operations, except for powder coating operations, which use less than one quart of coating per day or less than eight gallons of coating per year are exempt from ATC and PTO requirements (Rule 2020). For any period in which a facility exceeds the limit, the exemption

becomes void. The source must keep sufficient records to validate their exempt status. Sources losing their exempt status are required to submit an ATC application for their facility. A Notice of Violation (NOV) will be issued if the inspector discovers that the exemption has been lost. Regardless of the amount of coating used, automotive coating and refinishing operations (permitted or unpermitted) are still subject to the requirements of Rule 4602

Graphic art operations, touch-up coating operations, and the coating of radiators are exempt from Rule 4602 provisions.

C. Violations

An NOV (or NTC as allowed by policy) shall be issued for:

1. Lack of PTO/ATC or modifications without an ATC.
2. Violations of PTO/ATC conditions.
3. Violations of the requirements of Rule 4602.

D. Permit Conditions

Typical permit conditions are; record keeping requirements, coating/solvent usage limitations, daily emission limits of VOCs (DEL), and use of filters in the spray booth when operating. In order to change a permit condition, a refinishing facility must submit a new permit application to the Permit Services Division along with a request for the desired change.

If the permit condition has requirements or standards similar to those in Rule 4602, 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 4602.

III. INSPECTION PROCEDURES

A. General

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

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

1. Determine if the PTO is on-site, and discuss the permit conditions with the representative. Determine if the paint spray booth is in use at the time of inspection; if so, observe the exhaust for visible emissions. If visibles are observed, conduct a VEE. Note the manometer reading on the booth if one is present and required by the PTO. If the booth is not in use, examine the exhaust filters. Dirty filters are an indication of poor housekeeping; missing filters could be a violation of permit conditions.
2. Verify that approved coating application methods are used.
3. Determine the method used for spray equipment clean up. If an enclosed unit is utilized, verify that it is operable, and that solvent used is compliant.
4. Determine if the facility has a “Minimizer”, or other solvent distilling device. If so, see Appendix B for information on verifying compliant use.
5. Observe the work area to ensure that enclosed gun cleaners, paint cans, solvent and coating waste drums, solvent rag bins, etc., are closed.
6. Determine whether vehicles/equipment coated are Group I or Group II, or both, and if color-match is required. The coating VOC limits of Table 1 apply to Group I vehicles and components (color match inherently required) and Group II vehicles, components, and equipment where color match is required. Table 2 applies to Group II vehicles, components, and equipment where color match is not required.
7. Review coating records to determine individual product compliance and total VOC usage (if limited by a DEL). If you are unable to determine a product’s VOC content from product examination, record review, or manufacturer’s product specifications, contact your Supervisor to discuss the suitability of product sampling.
8. Conduct a 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. Equipment Application Methods

1. All coatings must be applied using either: brush, dip tanks, rollers, electrostatic systems, or High-Volume Low-Pressure (HVLP) spray equipment.

2. HVLP-High Volume, Low Pressure Applications.

HVLP guns must have an 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 new models have "HVLP" stamped onto the body of the spray gun. If not, the source should be able to provide manufacturer's literature, which will enable the inspector to verify compliance. Ensure that any spray guns on-site are either stamped "HVLP", or that documentation is kept on site that specifies the gun is HVLP, or has at least a 65% transfer efficiency according to SCAQMD test method as stated in the rule. Additional information should be obtained through the spray gun manufacturer or the local supplier, if needed. 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. SATAjet RP Digital 2

Non-HVLP equipment may be used to apply liquid masking agents (slime), but the spray gun must be dedicated for that purpose only.

If any non-compliant application systems or methods are found, an NOV shall be issued.

D. Surface Preparation and Cleanup Solvent

Solvents used for cleaning operations have limits defined as weight per volume of material, or "material VOC", therefore they may be diluted to meet the VOC limits specified by the rule. The use of solvents containing VOCs for surface preparation and cleanup must comply with the following:

1. Only solvents complying with the applicable limitations in Table 3 may be used for cleanup and surface preparation. Fresh or spent solvents, coatings, adhesives, catalysts, reducers, and cloth or paper used with these materials must be stored and/or disposed of in closed, non-

leaking, non-absorbent containers. This includes coating containers with stirring and mixing sticks.

2. Cleanup of spray equipment with solvents requires the use of an enclosed system or equipment proven to be equivalent. Some open units, such as one manufactured by Safety-Kleen, offer an open-bowl type unit that surrounds the parts to be cleaned, and has been determined to meet the requirements. Enclosed type cleaners must be closed when containing solvent, except to load or unload guns. If acetone, water, or other exempt solvents are used, or if the facility does not use any cleaning solvents in any application at the facility greater than 50 g/l “material VOC”, an enclosed system for cleaning is not required.
3. Solvents used for the removal of road tar are to be applied with a hand-held spray bottle, and are not subject to the VOC limits. However, the spray bottle should dispense the solvent without a propellant-induced force.
4. Solvents used for the surface preparation of plastic substrates shall be limited to 100 g VOC/l of material.
5. An NOV will be issued for non-compliance with the requirements for use and VOC limits.

E. Coating Standards

The coating VOC limits in the current version of Rule 4602 shall be enforced unless the facility has a permitted VOC control device. The limits are defined as “weight per volume of material, as applied, less water and exempt compounds” (meaning as mixed for application).

1. Precoats

There are several precoat products on the market that comply with the VOC requirements that are labeled or have been relabeled as precoats. These products are acceptable for use, provided:

- a. They are applied over bare metal primarily to deactivate the metal surface.
- b. They are applied in no more than one coat or at a minimum film thickness as recommended by the manufacturer.

During spot repairs, it is expected that some feathering of a precoat will occur over previously painted surfaces. This is especially the case where body filler has been used over that portion of the metal surface that has become exposed.

A precoat may not, however, be used in multiple coats as a primer-surfacer to fill surface imperfections. An inspector reviewing daily coating logs and/or purchase records should expect to see a significantly greater usage of water-based primer-surfacers than of precoat materials. The rule states "Precoat use shall not exceed the amount of compliant primer surfacer used."

2. Specialty Coating

Specialty coatings that provide unusual performance characteristics may be used and must comply with the VOC limits of the rule. "Performance characteristics" refer to a characteristic of the dried paint film and not a feature that provides quick drying or ease of application."

The requirement for a product to be "quick drying" does not justify its use under the specialty coating VOC limits. In some cases non-compliant clear coats have been used on automobile door jams. This is not acceptable

Where the use of specialty coatings (except antiglare/safety coatings) exceeds one gallon/day, the use of such coatings shall not exceed 5.0% of all coatings applied on a daily basis. The facility must maintain documentation to verify this 5% limitation is met.

3. Compliance Determination

Compliance with VOC limits will be determined through review of facility records and by examination of coatings kept at the facility. In the case where no VOC documentation has been made for coatings an NOV shall be issued for the records violation. Samples may also be taken to verify the VOC content of any questionable coating. Samples will be taken in accordance with District policy and with Supervisor authorization.

F. Other Standards

1. Prohibition of Sale

No person shall sell noncomplying coatings for use within the District. A suspected violation must be fully investigated and documented.

The inspector must determine how noncomplying coatings were purchased (e.g., coating manufacturer to distributor, distributor to body shop, etc.) and whether the seller was aware the coating was to be used in a noncomplying application within the District.

NOVs issued under this Section require prior approval of a Supervisor.

2. Prohibition of Specifications

No person shall specify the application of coatings that result in a violation of provisions of Rule 4602. If the facility claims that a contract requires the use of non-complying coatings, document the specifications and obtain a copy of the contract.

If a choice of more than one coating is specified, and any of the choices is compliant, or if the contract states that the coatings must comply with District regulations, then the specification is not a violation.

NOVs issued under this section require approval of a supervisor.

3. Compliance Statement Requirements

Coating manufacturers are required to provide VOC "as supplied" information for all coatings and coating components, on product data sheets or on material safety data sheets. The manufacturer is not required to provide VOC information of coatings "as applied." However, most coating manufacturers typically provide their customers with suggested mixing formulas and the VOC content of coatings "as applied", and have calculated VOCs for the Basecoat/Clearcoat Systems and Three-Stage Systems. If it appears that a manufacturer is not making the VOC "as supplied" information available, fully investigate and document the situation.

NOVs to coating manufacturers and/or distributors for failure to provide VOC information require prior approval of the supervisor.

IV. COATING RECORDS

A. Records Required

Any person subject to Section 5.0 of Rule 4602 shall maintain documentation for all coatings and solvents currently in use, containing all

data necessary to evaluate compliance, including the following, as applicable:

- Quantity and type of vehicles coated
- Specific coating type used on each vehicle
- 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.
- VOC emissions in lb/day if subject to a DEL.
- Purchase and usage records of solvents and reducers

These records may be kept in either grams/liter or pounds/gallon. Facilities shall maintain these records on a daily basis and shall be maintained for the previous 5-year period, or alternate period as specified by the PTO.

Sources exempt by Section 4.0 of the rule shall maintain records that substantiate the exemption.

B. Records Evaluation

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

1. Manufacturer's product information sheets. (They should provide specifications for all products in use at the facility.)
2. Daily coating records, including computer program records. (Spot-check to determine if coatings meet the requirements of the rule. A more comprehensive review should be initiated if problems are found.)
3. Records of surface preparation and cleanup solvents used. (Verify VOC compliance and that they are being maintained.)
4. Check for violations of DELs.

Appendix C demonstrates field calculations to be used in verifying compliance.

C. Records Not Immediately Available

In certain cases records are in existence at the time of inspection, but cannot be produced because knowledgeable personnel are not present, the records are temporarily elsewhere, computer failure, or for other good reasons. The inspector will advise the owner/operator of the need to have records readily available. If not available, the facility will provide the

records to the District within three working days. If the records are not produced within this time, an 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

An 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, examination of product cans, product data sheets, etc. If compliance cannot be determined, samples of questionable coatings should be taken if approved by a Supervisor.

V. POST-INSPECTION PROCEDURE

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

- A. Discuss 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 compliance with appropriate conditions. Discuss how permit conditions that appear to be incorrect may 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 noncomplying.
- 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 pamphlets, and ARB brochures, and how to obtain copies of the rule. Make appropriate recommendations to improve compliance and facilitate future inspections.

APPENDIX A – FORM LETTER TO RESIDENTIAL PAINTER

DATE

NAME
ADDRESS
CITY, STATE, ZIP

Dear Mr. _____,

The San Joaquin Valley Air Pollution Control District has restrictions against spray-painting of vehicles in residential areas. If odors affect a significant number of people or overspray from your painting causes property damage, you may be in violation of Rule 4102 – Nuisance, and be subject to penalties.

Also, if you use more than one quart of paint per day or 8 gallons of paint per year you would be in violation of Rule 2010 – Permits Required. Due to your location, zoning restrictions, and fire marshal regulations, you would not be able to obtain a permit from the District.

Further, regardless of the amount of paint you use, you could be subject to the requirements of Rule 4602 – Motor Vehicle and Mobile Equipment Coating Operations. This rule specifies VOC limitations in coatings, coating application methods, and record keeping requirements.

If you are found to be in violation of one of these rules you could be issued a Notice of Violation and be subject to substantial penalties.

If you have questions please call the Compliance Division at (XXX) XXX-XXXX.

Sincerely,

(NAME)
Supervising Air Quality Inspector

APPENDIX B – MINIMIZER USE

To clarify the District's position as to the compliant use of a "Minimizer" or other solvent distillation device supplied to paint shops, three scenarios are discussed below:

1. Safety-Kleen is marketing a machine to paint coating facilities called a Minimizer that is designed to separate the solids from solvents through a distillation process. This unit can operate as a stand-alone unit where different types of coatings and solvents are poured into it. The Minimizer progresses through heating cycles, which separates the solvents from the solids through a distillation process. The solvents are recycled or re-used, and Safety-Kleen comes by to pick up the solids for disposal.

2. Another application is where the Minimizer is connected to an enclosed gun cleaner. In this application, Safety-Kleen supplies Clear Choice (100 % acetone) solvent to the enclosed gun cleaner. As the gun cleaner is utilized, a mixture of paint, reducer, and catalyst will combine with the acetone and enter the Minimizer. The Minimizer progresses through heating cycles, which separates the solvents from the solids through a distillation process and transfers the solvents, back to the enclosed gun cleaner. No additional waste coatings are added to the mix other than the residual in the spray guns being cleaned.

3. The third application is where the Minimizer is connected to an enclosed gun cleaner. In this application, Safety-Kleen supplies Heavy Duty Solvent 550 (500 g/l VOC) or Virgin 550 Solvent (525 g/l VOC) to the enclosed gun cleaner. As the gun cleaner is utilized, a mixture of paint, reducer, and catalyst will combine with the solvent and enter the Minimizer. The Minimizer progresses through heating cycles, which separates the solvents from the solids through a distillation process and transfers the solvents, back to the enclosed gun cleaner. No additional waste coatings are added to the mix other than the residual in the spray guns being cleaned.

The District will allow the Minimizer to be used as described in scenario #1 or #2. If solvent from a unit described under scenario #1 is to be used on-site, the solvent mix must first be analyzed to verify that the VOC content complies with the 550 g/l (4.6 lb/gal) limit, or the limits of any other use. Records of the lab analyses must

be on site for each batch of the produced solvent used. The Minimizer may NOT be used as described in scenario #3.

APPENDIX C – VOC FIELD CALCULATIONS OF COATINGS

Rule 4602 has limitations on the volatile organic compound (VOC) content of most materials on a *less water and exempt compounds* basis. The rationale behind this is to preclude attempts to achieve “compliance” by simply diluting coatings with water or exempt solvents. Since coatings work by the deposition of resins and solids onto the substrate, if a more dilute coating is used, more of it has to be used in order to achieve the same result, resulting in higher VOC emissions.

Manufacturers use the following formula to calculate VOCs for compliance with Table 1 and 2 of Rule 4602. You may see it termed “VOC coating”, “VOC less exempt”, “VOC as applied less exempt”, “VOC le”, and other ways. This value will be larger or the same as the “material” VOC value.

Sec 3.20 Grams of VOC per liter of Coating Excluding Water and Exempt Compounds:

$$= \frac{Ws - Ww - Wec}{Vm - Vw - Vec}$$

Ws = weight of volatile compounds (remember that H₂O is “volatile”)
Ww = weight of water
Wec = weight of exempt compounds
Vm = volume of material
Vw = volume of water
Vec = volume of exempt compounds

Manufacturers use the following formula to calculate “material VOC”. You may see this value, if listed, as “VOC material” or “VOC as packaged”, or “VOC ap”. This value can be smaller or the same as the “less exempt” value, but would not be larger. The “less exempt” and “material” VOC values would be the same if there were no water or exempt compounds in the coating.

Sec 3.21 Grams of VOC per liter of Material

$$= \frac{Ws - Ww - Wec}{Vm}$$

Ws = weight of volatile compounds
Ww = weight of water

Wec = weight of exempt compounds
Vm = volume of material

READY TO SPRAY COATINGS

Some coatings are used from the manufacturer with no mixing involved (ready to spray). In these cases, use the “VOC less exempt” data from the manufacturer for the coating “as applied” compliance determination with the limits in Tables 1 & 2.

REDUCED AND/OR CATALYZED COATINGS WITH KNOWN “AS APPLIED” VOC

Some coatings have to be mixed with catalysts (hardeners) and/or reducers (thinners) in a ratio recommended by the manufacturer. If the facility follows the mix ratios as recommended, use the “VOC less exempt as applied” data given by the manufacturer.

REDUCED AND/OR CATALYZED COATINGS WITH UNKNOWN “AS APPLIED” VOC

Some coatings have been mixed in ratios not specified by the manufacturer, or have been mixed with catalysts or reducers from different manufacturers. In these cases, a “coating VOC as applied, less exempts” will have to be calculated.

Calculating “as applied” VOC, less water and exempt compounds

The following formula gives a “ballpark” coating value, which is easy to use and adequate for a field calculation in most situations. Use VOC” less exempt” values.

Example: A single staged topcoat mixed in the shop as follows:

6 parts base : 1 part catalyst : 1 part reducer

(If the facility states the base is “reduced 10%”, use 0.1 as the reducer part.)

$$\text{VOC} = \frac{(6 \times \text{VOC base}) + (1 \times \text{VOC catalyst}) + (1 \times \text{VOC reducer})}{(6 + 1 + 1)}$$

(If acetone or water alone is the “reducer” it is completely ignored in the above equation, both in the numerator and the denominator.)

The above method is the most accurate when dealing with coatings and components that contain no exempt compounds or water. (You would easily be able to identify those

components by comparing the “VOC less exempt” (VOC le) value with the “VOC material” value on the can or in the MSDS. Even if the coating or additives contain exempt compounds, attempt to use this formula to show compliance, since the formula would only “over-estimate” the VOC value.

If using the formula shows non-compliance with the VOC coating limits with an exceedance of less than 0.5 lb/gal, and the coatings contain exempt compounds, the following formula should be used to determine an accurate VOC content for a reduced and/or catalyzed coating. The formula used by the manufacturer removes exempt compounds from the weight AND the volume of the component; the ballpark calculation does not account for that.

VOC as applied less water and exempts for a mixture of coating, reducer, and catalyst
=

$$\frac{(Ws1 + Ws2 + Ws3) - (Ww1 + Ww2 + Ww3) - (Wec1 + Wec2 + Wec3)}{(Vm1 + Vm2 + Vm3) - (Vw1 + Vw2 + Vw3) - (Vec1 + Vec2 + Vec3)}$$

Where:

Ws1 = weight of all volatile compounds in the original coating
 Ws2 = weight of volatile compounds in reducer
 Ws3 = weight of volatile compounds in catalyst

Ww1 = weight of water in the original coating
 Ww2 = weight of water in reducer
 Ww3 = weight of water in catalyst

Wec1 = weight of exempt compounds in the original coating
 Wec2 = weight of exempt compounds in reducer
 Wec3 = weight of exempt compounds in catalyst

Vm1 = volume of original coating material
 Vm2 = volume of reducer
 Vm3 = volume of catalyst

Vw1 = volume of water in coating material
 Vw2 = volume of water in reducer
 Vw3 = volume of water in catalyst

Vec1 = volume of exempt compounds in coating
 Vec2 = volume of exempt compounds in reducer
 Vec3 = volume of exempt compounds in catalyst

The CARB Automotive Refinishing manual formula shown below also can be used. This formula adjusts the volume “parts” used in the final mix at the shop.

$$R \text{ (adjusted volume of component)} = V \times [1 - ((\text{wt}\% \text{es} / \text{Density es})(\text{Density m}) - (\text{wt}\% \text{H}_2\text{O} / \text{Density H}_2\text{O})(\text{Density m}))]$$

Where:

Volume or “parts”	V
Adjusted volume	R
Material density	Density m
Exempt solvent density	Density es
% exempt solvents by weight	wt%es
% water by weight	wt%H ₂ O
Water density	D H ₂ O

Use the Adjusted volume or parts in the following formula to determine compliance:

Where:

R _a	=	Adjusted volume of component a
R _b	=	Adjusted volume of component b
R _c	=	Adjusted volume of component c

$$\text{VOC lb/gal le} = \frac{(\text{VOC}_a \text{ lb/g} \times R_a) + (\text{VOC}_b \text{ lb/g} \times R_b) + (\text{VOC}_c \text{ lb/g} \times R_c)}{R_a + R_b + R_c}$$

These are more extensive than ballpark field calculations, and require all of the above data from the manufacturer.

CALCULATING VOC EMISSIONS FOR DEL COMPLIANCE DETERMINATION

“VOC as packaged” would be the “Material” VOC as defined in the rule. That value is used to calculate a facility’s VOC emissions with respect to the gallons of coatings actually used that day. It only comes into play if the facility has a Daily Emission Limit for VOCs on their permit. For a ballpark determination of compliance with a DEL, use the lb/gal values of the coatings recorded (which would be “less exempt” values if the coatings used contained exempt compounds), multiplied by the volumes used. Facilities with DELs should be doing this on their records. Be alert to the fact that using these numbers *over-estimates* the VOCs emitted from the coating usage. If the facility can meet its DEL limit using these values, then use of those figures is allowed. If the facility is showing non-compliance using these values, use the formula for “Grams of VOC per liter of Material”, to arrive at the “VOC material” lb/gal value of each coating. If a more extensive calculation is required for reduced and catalyzed coatings, use the above formulas and simply input the total volume of material in the denominator rather than the adjusted volume, while accounting for the less exempt values in the numerator.

MULTI-STAGED COATING SYSTEMS (BASECOAT/CLEARCOAT)

$$\frac{\mathbf{VOC\ basecoat + (2x\ VOC\ clearcoat)}}{\mathbf{3}} = \mathbf{VOC\ multistage}$$

(Note: use the same previous calculations to arrive at each component value, and plug into the above formula. This is a theoretical formula with no regards to amounts sprayed. See the rule for additional types of “multi-staged” formulas. The spraying of low VOC clearcoats theoretically seal in VOCs in the basecoat.

Clearcoats may not be sprayed over non-compliant “single-staged topcoats” to make a multistage system. Single-staged topcoats already have a clear component within them.