

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**RULE 481. -- SPRAY COATING OPERATIONS**

*(Adopted October 7, 1977)(Amended December 2, 1977)  
(Amended May 5, 1978)(Amended November 17, 2000)  
(Amended January 11, 2002)*

(a) Applicability

This rule applies to all spray painting and spray coating operations and equipment.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) AIRLESS SPRAY EQUIPMENT is spray equipment used to apply coatings where the coating fluid is supplied to the gun under fluid pressure and no air is added to the gun.
- (2) CATALYZED EPOXY is a coating produced by combining an epoxy resin with a curing agent. Solvent evaporation causes the surface to dry while a chemical cross-linking process, called copolymerization, is the curing mechanism.
- (3) CONTROL ENCLOSURE or SPRAY ENCLOSURE is any equipment or enclosure used to capture or reduce overspray from the application of any coating, adhesive, or other VOC-containing materials.
- (4) ELECTROSTATIC SPRAY EQUIPMENT is spray equipment used to apply coatings where the atomized coating droplets are charged and subsequently deposited on the substrate by electrostatic attraction.
- (5) EXTREME HIGH GLOSS COATING is any coating which achieves at least 95 percent reflectance on a 60° meter when tested by ASTM Method D 523-89 “Standard Test Method for Specular Gloss” (1999).
- (6) EXTERNAL AIR POLLUTION CONTROL DEVICE is any add-on device which is used to reduce the issuance of air contaminants.
- (7) FACE VELOCITY is the air velocity through the exhaust filters of a spray enclosure calculated by the following formula:

$$V_{\text{air}} = \frac{\text{VFR (CFM)} \times 144 \text{ (in}^2\text{/ft}^2\text{)}}{N_{\text{filter}} \times A_{\text{filter}} \text{ (in}^2\text{)}}$$

Where:

$V_{\text{air}}$	=	Air velocity (ft/min)
VFR	=	Volumetric flow rate (CFM) of fan
144	=	Conversion factor (ft <sup>2</sup> to in <sup>2</sup> )
$N_{\text{filter}}$	=	Total number of filter elements
$A_{\text{filter}}$	=	Area of individual filter element (in <sup>2</sup> )

- (8) FIBROUS COATING is a coating containing fibers, such as fiberglass.
  - (9) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY EQUIPMENT is spray equipment used to apply coatings or adhesives by means of a spray gun which is designed to be operated between 0.1 and 10 pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns.
  - (10) LACQUER is a coating substance consisting of resinous materials, such as cellulose esters or ethers, shellac, or gum of alkyd resins, dissolved in ethyl alcohol or other solvent that evaporates rapidly on application by evaporation without chemical reaction, leaving a tough, adherent film.
  - (11) POLYURETHANE is a thermoplastic polymer produced by the condensation reaction of a polyisocyanate and a hydroxyl-containing material.
  - (12) PRIMER is a coating applied for purposes of corrosion resistance or adhesion of subsequent coatings.
  - (13) TRANSFER EFFICIENCY is the ratio of the weight or volume of coating solids adhering to an object to the total weight or volume, respectively, of coating solids used in the application process, expressed as a percentage.
- (c) Equipment and Operational Requirements
- A person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:
- (1) The spray coating equipment is operated inside a control enclosure which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.

- (2) Coatings are applied with HVLP, electrostatic and/or airless spray equipment.
  - (3) An alternative method of coating application or control is used which has an effectiveness equal to or greater than the equipment specified in paragraph (c)(1) or (c)(2) of this rule.
- (d) Test Methods
- (1) The transfer efficiency of alternative coating application methods, as defined by paragraph (c)(3), shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User," May 24, 1989. Alternative test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.
  - (2) Multiple Test Methods  
When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods shall constitute a violation of the rule.
  - (3) All test methods referenced in subdivision (d) shall be the most recent version approved by the Executive Officer, CARB, and EPA.
- (e) Exemptions
- The provisions of this rule shall not apply to:
- (1) Spray coating of three gallons per day or less of coatings at a single location. Records of coating usage shall be maintained pursuant to Rule 109.
  - (2) Spray coating of 66 gallons per calendar month or less of coatings at a single location. Records of coating usage shall be maintained pursuant to Rule 109.
  - (3) Spray coating of a dwelling and its appurtenances by the owner or occupant of a four-family dwelling or less.
  - (4) Spray coating of lacquers on cabinets and wood and simulated-wood surfaces adhesives, fibrous coatings, abrasive materials, portland cement mixtures, elastomers, stains, metal surface primers, or textured coatings, provided such spray coating cannot be conducted inside a control enclosure.

- (5) Spray coating for construction or maintenance purposes of: structural steel; pipes, valves and flanges six inches in diameter or less; ornamental objects on buildings, structures and their appurtenances; or aircraft ground support equipment which cannot fit inside of a spray enclosure with effective internal dimensions of 10'W x 25'L x 8'H.
- (6) Spray coating of catalyzed epoxy or polyurethane primers or coatings on large aerospace subassemblies or completed vehicles where the stage of assembly precludes placement inside a control enclosure.
- (7) Any control enclosure connected to an external air pollution control device with a control efficiency equivalent to the filters specified in paragraph (c)(1) of this rule and which has been approved by the Executive Officer.
- (8) Application of extreme high gloss topcoats used in marine pleasure craft coating operations.