

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

**RULE 43 - SURFACE PREPARATION AND COATING OF MARINE VESSELS**

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**REGULATION 8**  
**ORGANIC COMPOUNDS**  
**RULE 43**  
**SURFACE PREPARATION AND COATING OF MARINE VESSELS**

(Adopted November 23, 1988)

**8-43-100 GENERAL**

**8-43-101 Description:** The purpose of this Rule is to limit the emission of volatile organic compounds from the surface preparation and coating of marine vessels, components and structures intended for exposure to a marine environment, including oil drilling platforms and navigational aids.

*(Amended October 16, 2002)*

**8-43-110 Exemption, Pleasure Craft and Fishing Vessels:** The provisions of this Rule shall not apply to the coating of pleasure craft or commercial fishing vessels using coatings purchased in containers of one gallon or less.

**8-43-111 Exemption, Low Usage Coatings:** The requirements of Section 8-43-301 and 302 shall not apply to any coating used in volumes less than 75.7 l (20 gal) in any one calendar year, provided the requirements of Section 8-43-401 are satisfied.

**8-43-112 Exemption, Aerosol Cans:** The provisions of this Rule shall not apply to coating operations employing hand held aerosol cans. Application of coating from aerosol cans is subject to the provisions of Regulation 8, Rule 49 or to the California Air Resources Board aerosol coating product regulation found in Title 17 of the California Code of Regulations, beginning at Section 94520.

*(Amended 6/20/90; 10/16/02)*

**8-43-113 Exemption, Solid Film Lubricant:** The provisions of this Rule shall not apply to any solid film lubricant.

**8-43-114 Exemption, Touch-up:** The provisions of this Rule shall not apply to Touch-up operations.

**8-43-115 Exemption, Aircraft and Aerospace Vehicles:** The provisions of this Rule shall not apply to the coating of aircraft and aerospace vehicles subject to Rule 29 of Regulation 8.

**8-43-116 Exemption, Architectural Coatings:** The provisions of this Rule shall not apply to bridges, piers or other stationary structures which require architectural coatings subject to Regulation 8, Rule 3.

*(Amended October 6, 1993)*

**8-43-117 Exemption, Aluminum Hull Coatings:** The provisions of this Rule shall not apply to antifoulant coating used on aluminum hulls, provided records are maintained as specified in Section 8-43-501.

**8-43-118 Deleted October 16, 2002**

**8-43-119 Exemption, Historic Vessels:** The brush or roller application of up to 55 gallons of coatings per year to historic vessels by a public museum or park is exempt from the VOC limits of Sections 8-43-301 and 302, provided records are maintained as specified in Section 8-43-501.

*(Adopted April 18, 2001)*

**8-43-120 Limited Exemption, Specific Surface Preparation Operations:** The requirements of Section 8-43-321 shall not apply to surface preparation solvent used on (i) surfaces prepared for adhesive bonding of dissimilar substrates, (ii) gears, turbines, turbine generators and associated housings with faying or working surfaces where surfaces are required to undergo material testing or application of transfer dyes, (iii) electrical and electronic components, or (iv) cleaning associated with research and development operations; performance testing to determine coating, adhesive or ink performance; or testing for quality control or quality assurance purposes.

*(Adopted October 16, 2002)*

**8-43-121 Limited Exemption, Military Components:** The requirements of Section 8-43-321 shall not apply to the surface preparation of any military component for which a contract exists that specifies the use of an organic solvent that does not comply with

the standards in Section 8-43-321, provided that contract has been entered into prior to December 1, 2005.

*(Adopted October 16, 2002)*

**8-43-200 DEFINITIONS**

**8-43-201 Air-Dried Coating:** Any coating which is not heated above 90°C (194°F) for the purpose of curing or drying.

**8-43-202 Baked Coating:** Any coating which is cured or dried in an oven where the oven air temperature exceeds 90°C (194°F).

**8-43-203 Coating Operation:** The sum of all steps involved in the application, drying and/or curing of surface coatings.

**8-43-204 Antifoulant Coating:** Any coating applied to the underwater portion of a vessel to prevent or reduce the attachment of biological organisms and registered with the Environmental Protection Agency (EPA) as a pesticide.

**8-43-205 Heat-Resistant Coating:** Any coating which, during normal use, must withstand temperatures of at least 80°C (175°F).

**8-43-206 High-Gloss Coating:** Any coating which achieves at least 85% reflectance on a 60° meter when tested by ASTM Method D-523.

**8-43-207 High-Temperature Coating:** Any coating which, during normal use, must withstand temperatures of at least 426°C (800°F).

**8-43-208 Inorganic Zinc Coating:** A coating derived from zinc dust incorporated into an inorganic silicate binder for the express purpose of providing corrosion protection.

**8-43-209 Navigational Aids:** Buoys or other Coast Guard waterway markers. For the purposes of subsection 8-43-302.6, specialty coating limit applies only to the re-coating of in-use navigational aids done at the usage site to be returned immediately to the water.

**8-43-210 Pleasure Craft:** Privately owned vessels used for non-commercial purposes.

**8-43-211 Pretreatment Wash Primer:** Any coating which contains a minimum of 1/2% acid by weight applied directly to bare metal surfaces and is necessary to provide surface etching.

**8-43-212 Deleted October 6, 1993**

**8-43-213 Solid Film Lubricant:** A very thin coating consisting of an organic binder system containing as its chief pigment material one or more of the following: molybdenum disulfide, graphite, polytetrafluoroethylene (PTFE) or other solids that act as a dry lubricant between meeting surfaces.

**8-43-214 Touch-up:** That portion of the surface preparation or coating operation which is incidental to the main coating process but necessary to cover minor imperfections or mechanical damage incurred prior to intended use.

*(Amended October 16, 2002)*

**8-43-215 Volatile Organic Compounds:** Any organic compound (excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate) which would be emitted during use, application, curing or drying of a solvent or surface coating.

215.1 For purposes of calculating VOC content of a coating, any water or any of the following non-precursor organic compounds shall not be considered to be part of the coating:

acetone

methyl acetate

parachlorobenzotrifluoride (PCBTF)

cyclic, branched or linear, completely methylated siloxanes (VMS)

215.2 For the purposes of calculating the VOC content of a surface preparation or cleaning solvent, any water or the non-precursor organic compounds listed in subsection 8-43-215.1, above, shall be considered part of the volume of solvent but shall not be considered part of the VOC content of the solvent.

*(Amended 12/20/95; 10/16/02)*

**8-43-216 Undersea Weapons System:** All components of a weapons system that is launched or fired undersea.

- 8-43-217 Military Exterior Topcoat:** An exterior topcoat applied to military vessels, including U.S. Coast Guard vessels subject to specified chemical, biological, and radiological washdown requirements.
- 8-43-218 Specialty Interior Coating:** An extreme performance coating used on interior surfaces aboard ships which has the fire retardant properties and has a toxicity index of less than 0.03 in addition to existing military physical and performance requirements.
- 8-43-219 Wire Spray Aluminum:** A process of applying a molten aluminum coating to a steel substrate using an oxy-fuel combustion spray gun.
- 8-43-220 Sealant Coat for Wire Spray Aluminum:** A coating approximately one mil thick of epoxy, thinned one for one with appropriate solvent.
- 8-43-221 Special Marking Coating:** Coating used specifically for items such as flight decks, ships numbers and other demarcations for safety and other purposes.
- 8-43-222 Tack Coat:** An epoxy coat up to two mils thick applied to allow adhesion to a subsequent coating where the existing epoxy coating has aged beyond the time limit specified by the manufacturer for the application of the next coat.
- 8-43-223 Repair and Maintenance of Commercial Vessels:** The partial recoating of in-use non-U.S. Navy vessels over existing thermoplastic coatings.
- 8-43-224 Thermoplastic Coating:** A single package lacquer drying coating where the resin would become pliable with the application of heat such as vinyl, chlorinated rubber or bituminous.
- 8-43-225 Extreme High-Gloss Coating:** Any coating which achieves at least 95% reflectance on a 60° meter when tested by ASTM Method D-523.
- 8-43-226 Low Activation Interior Coating:** A special composition coating used on interior surfaces aboard ships to minimize the activation of pigments on painted surfaces within a radiation environment.
- 8-43-227 Key System Operating Parameter:** An air pollution abatement equipment operating parameter, such as temperature, flow rate or pressure, that ensures operation of the abatement equipment within manufacturer specifications and compliance with the standards in Sections 8-43-301, 302, 320 and/or 321.
- (Adopted 6/1/94; 10/16/02)*
- 8-43-228 Approved Emission Control System:** A system for reducing emissions to the atmosphere, consisting of an abatement device and a collection system, which achieves the abatement efficiency specified in the applicable standards at all times during the operation and meets the requirements of Regulation 2, Rule 1.
- (Adopted October 16, 2002)*
- 8-43-229 Surface Preparation:** The cleaning of marine vessels, components and structures subject to a marine environment prior to coating, further treatment, sale, or intended use. Solvent cleaning of marine components subject to and in compliance with Regulation 8, Rule 16: Solvent Cleaning Operations, is not subject to the surface preparation standards in this Rule.
- (Adopted October 16, 2002)*
- 8-43-230 Electrical and Electronic Components:** Components and assemblies of components that generate, convert, transmit, or modify electrical energy. Electrical and electronic components include, but are not limited to, wires, windings, stators, rotors, magnets, contacts, relays, printed circuit boards, printed wire assemblies, wiring boards, integrated circuits, resistors, capacitors and transistors. Cabinets in which electrical and electronic components are housed are not considered electrical and electronic components.
- (Adopted October 16, 2002)*
- 8-43-300 STANDARDS**
- 8-43-301 Limits:** Effective September 1, 1989, except as otherwise provided by this Rule, a person shall not apply to any marine vessel, component or structure intended for exposure to a marine environment any coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter of coating applied, excluding water, unless emissions to the atmosphere are controlled to an equivalent level (pounds VOC per gallon of solids) by an air pollution abatement equipment with an

abatement device efficiency of at least 85% that meets the requirements of Regulation 2, Rule 1.

301.1 Baked Coatings: 275 grams/liter (2.3 pounds/gallon)

301.2 Air-Dried Coatings: 340 grams/liter (2.8 pounds/gallon)

*(Amended 10/6/93; 6/1/94)*

**8-43-302 Specialty Coating Limits:** A person shall not apply to any marine vessel, component or structure intended for exposure to a marine environment any specialty coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter (pounds per gallon) of coating applied, excluding water, unless emissions to the atmosphere are controlled to an equivalent level (pounds VOC per gallon of solids) by an air pollution abatement equipment with an abatement device efficiency of at least 85% which meets the requirements of Regulation 2, Rule 1.

302.1 Anti-foulant 400 (3.3)

302.2 Heat Resistant (Air Dried) 420 (3.5)

Heat Resistant (Baked) 360 (3.0)

302.3 High-Gloss (Air Dried) 340 (2.8)

High Gloss (Baked) 275 (2.3)

302.4 High-Temperature 500 (4.2)

302.5 Inorganic Zinc 340 (2.8)

302.6 Navigational Aids 550 (4.6)

302.7 Pretreatment Wash Primer 420 (3.5)

302.8 Undersea Weapons System (Air Dried) 340 (2.8)

Undersea Weapons System (Baked) 275 (2.3)

302.9 Military Exterior Topcoat 340 (2.8)

302.10 Specialty Interior 340 (2.8)

302.11 Sealant Coat for Wire 610 (5.1)

Spray Aluminum

302.12 Special Marking 490 (4.1)

302.13 Tack Coat 610 (5.1)

302.14 Repair and Maintenance 340 (2.8)

Thermoplastic

302.15 Extreme High-Gloss (Air Dried) 490 (4.1)

Extreme High Gloss (Baked) 420 (3.5)

302.16 Low Activation Interior 420 (3.5)

Coating

*(Amended 10/6/93; 6/1/94; 4/18/01)*

**8-43-303 Deleted October 6, 1993**

**8-43-304 Prohibition of Specification:** No person shall require for use or specify the application of a coating or solvent subject to this Rule if such use or application results in a violation of any provision of this Rule. The prohibition of this Section shall apply to all written or oral contracts under the terms of which any coating or solvent is applied to any marine vessel, component or structure intended for exposure to a marine environment at any physical location within the District.

*(Amended October 16, 2002)*

**8-43-305 Compliance Statement Requirement:** The manufacturer shall include a designation of VOC (as defined in Section 8-43-215) expressed in grams per liter or pounds per gallon on data sheets for all coatings and solvents which are offered for sale in the District to be used on marine vessels, components and structures intended for exposure to a marine environment.

*(Amended October 16, 2002)*

**8-43-306 Deleted October 6, 1993**

**8-43-307 Deleted October 6, 1993**

**8-43-320 Solvent Evaporative Loss Minimization:** Unless emissions to the atmosphere are controlled by an approved emission control system with an overall abatement efficiency of at least 85%, any person using solvent for surface preparation or cleanup or any person mixing, using or disposing of coatings containing organic solvent:

320.1 Shall use closed containers for the storage or disposal of cloth or paper used for solvent surface preparation and cleanup.

- 320.2 Shall close containers of coating, catalyst, and fresh or spent solvent when not in use.
- 320.3 Shall not use organic solvent for the cleanup of spray equipment, including paint lines, with a VOC content in excess of 50 g/l (0.42 lbs/gal) unless either (i) the solvent is pressurized through spray equipment with atomizing air off or dispensed from a small non-atomizing container, and collected and stored in a closed container until recycled or properly disposed of offsite, or (ii) a spray gun washer subject to and in compliance with the requirements of Regulation 8, Rule 16 is used.

*(Amended October 16, 2002)*

- 8-43-321 Surface Preparation Standards:** Effective June 1, 2003, no person shall use a surface preparation solvent with a VOC content that exceeds 50 g/l (0.42 lbs/gal) for surface preparation of any marine vessel, component or structure subject to a marine environment unless emissions to the atmosphere are controlled to an equivalent level by an approved emission control system with an abatement device efficiency of at least 85 percent that meets the requirements of Regulation 2, Rule 1.

*(Adopted October 16, 2002)*

#### **8-43-400 ADMINISTRATIVE REQUIREMENTS**

- 8-43-401 Low-Usage Coatings Petition:** Any person seeking to satisfy the conditions of Section 8-43-111 shall comply with the following requirements:

- 401.1 The user or specifier shall petition the APCO in writing that substitute complying coatings are not available.
- 401.2 If the APCO grants written approval, such petition will be repeated on an annual basis.

#### **8-43-402 Deleted October 16, 2002**

#### **8-43-500 MONITORING AND RECORDS**

- 8-43-501 Coating Records:** Any person using coatings or solvents subject this Rule shall:

- 501.1 Maintain, or have available, a current list of coatings in use which provides all of the coating data necessary to evaluate compliance, including the following information, as applicable:
- a. coating, catalyst and reducer used
  - b. mix ratio of components used
  - c. VOC content of coating as applied
  - d. military specification of the component or area coated
  - e. VOC content of solvent used for cleanup and surface preparation
- 501.2 Have available monthly records that provide the following information on a daily basis, as applicable:
- a. coating and mix ratio of components in the coating used
  - b. quantity of each coating applied
  - c. identification of specialty coating limit category
  - d. oven temperature
- 501.3 Have available monthly records of the type and amount of surface preparation and clean-up solvent, unless more frequently specified by permit conditions imposed by Regulation 2-1-403.
- 501.4 Records shall be retained and available for inspection by the APCO for the previous 24 month period.

*(Amended October 16, 2002)*

#### **8-43-502 Deleted October 6, 1993**

- 8-43-503 Air Pollution Abatement Equipment, Recordkeeping Requirements:** Any person operating air pollution abatement equipment to comply with Sections 8-43-301, 302, 320 or 321, in addition to Section 8-43-501, shall record key system operating parameters on a daily basis.

*(Adopted 6/1/94; Amended 10/16/02)*

#### **8-43-600 MANUAL OF PROCEDURES**

- 8-43-601 Analysis of Samples:** Samples of volatile organic compounds as specified in Sections 8-43-301 and 302 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 21 or 22.  
*(Amended October 6, 1993)*
- 8-43-602 Determination of Emissions:** Emissions of volatile organic compounds as specified in Sections 8-43-301 302, 320 and/or 321 shall be measured as prescribed by any of the following methods 1) BAAQMD Manual of Procedures, Volume IV, ST-7, 2) EPA Method 25 or 25A. When either EPA Method 25, or 25A is used, control device equivalency shall be determined as prescribed in 55 FR 26865 (June 29, 1990). A source shall be considered in violation if the VOC emissions measured by any of the referenced test methods exceed the standards of this rule.  
*(Amended 6/1/94; 10/16/02)*
- 8-43-603 Determination of Acid Content:** Measurement of acid content as specified in Section 8-43-211 shall be determined in accordance with ASTM Method D-1613-96.  
*(Adopted 10/6/93; Amended 10/16/02)*
- 8-43-604 Analysis of Solvent Samples:** Samples of volatile organic compounds as specified in Section 8-43-320 and 321 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 31.  
*(Adopted October 16, 2002)*
- 8-43-605 Analysis of Exempt Compounds:** Samples of PCBTF, VMS, and methyl acetate shall be analyzed by the Manual of Procedures, Volume III, Method 41, 43 and by ASTM Method D-6133-00, respectively.  
*(Adopted October 16, 2002)*