

**California Air Resources Board
Suggested Control Measure for Architectural Coatings**

Handout for Workshop on February 19, 2019

Draft Proposed Changes for Selected Coating Categories

On February 19, 2019, the California Air Resources Board (CARB or Board) staff will host a public workshop to discuss proposed changes to CARB's Suggested Control Measure for Architectural Coatings (SCM). The SCM is a model rule which has been used by California air pollution control districts to develop and amend local air district architectural coating rules.

At the workshop, CARB staff will discuss draft proposed changes to the 2007 SCM. The proposal includes draft proposed volatile organic compound (VOC) limits for two new categories and lower VOC limits for several existing categories. The proposal also includes changes for some coating category definitions. The draft proposed changes to be presented at the workshop are summarized in the Attachment. CARB staff will provide a full strikeout/underline version of the SCM document and slides of the workshop presentation at about one week prior to the workshop.

For additional information on the SCM revision process, please visit our website at <https://www.arb.ca.gov/coatings/arch/docs.htm>

If you have any questions about the SCM workshop, please contact Mr. Jose Gomez, Manager, Technical Development Section, at (916) 324-8033 or jgomez@arb.ca.gov.

To provide comments on the draft proposed changes, please contact Mr. Glen Villa at (916) 324-8177 or gvilla@arb.ca.gov

ATTACHMENT

Draft Proposed Changes to the Suggested Control Measure for Architectural Coatings (February 2019)

Background

Architectural coatings are products that are applied to stationary structures and their accessories. They include house paints, stains, industrial maintenance coatings, traffic coatings, and many other products. When these coatings are applied, VOCs are emitted from the coatings and from solvents that are used for thinning and clean-up.

Control of VOC emissions from architectural coatings is primarily the responsibility of the districts. CARB is responsible for serving as an oversight agency and providing assistance to the districts. One way that CARB provides assistance is by developing a Suggested Control Measure (SCM) for architectural coatings. The SCM serves as a model rule that can be used by districts throughout California. CARB approved an SCM for architectural coatings in 1977 and amended it in 1985, 1989, 2000 and 2007. While CARB provides support to the districts by developing the SCM, the districts are ultimately responsible for adopting, implementing, and enforcing architectural coating rules in California.

There are currently 22 air districts with local rules. Of these, 15 districts have rules based on the 2007 SCM. Six districts have rules based on the 2000 SCM. The South Coast AQMD Rule 1113 includes VOC limits that are, in some cases, more stringent than the 2007 SCM. The proposed SCM would enable air districts to update their rules to achieve additional VOC emissions reductions to help them meet air quality standards. The South Coast AQMD is not expected to adopt the proposed SCM because its architectural coatings Rule 1113 already includes VOC limits that are at least as stringent as the proposed SCM. The 15 districts with an SCM-based rule encompass about 53 percent of California's population, and the South Coast AQMD accounts for 43 percent. The remaining 4 percent of the State's population must comply with the 2000 SCM or U.S. EPA's national rule for architectural coatings.

2014 Survey

In 2014, CARB developed the survey in coordination with air districts and industry representatives. Several webinars were conducted to develop a reporting tool and discuss the survey with industry representatives. Industry representatives submitted survey data in 2015 and 2016. CARB staff reviewed the survey data and followed up with companies to clarify submittals of the survey data. CARB staff continued to review and work with industry representatives to correct their data submittals.

In December 2017, summaries of the data submitted in the 2014 Survey was posted at <http://www.arb.ca.gov/coatings/arch/survey/2014/2014survey.htm>. The survey was sent to companies who participated in the 2005 survey and companies participating in the South Coast Air Quality Management District architectural coating programs.

In total, 161 companies responded to the survey. The survey included sales volumes and VOC emissions for the 2013 calendar year. The total sales for 2013 was reported as 89 million gallons of coatings (market adjusted). The total VOC emissions reported for 2013 was 29.7 tons per day, market adjusted. The survey data is the foundation of the proposal to update the SCM. The data from the survey was used to evaluate the feasibility of lowering VOC limits for coating categories.

Proposal to Update the 2007 SCM for Architectural Coatings

CARB staff formed a working group consisting of air districts that agreed to assist CARB staff in the development of the proposed SCM. Six air districts are currently participating in the working group. The draft proposed amendments to the 2007 SCM were jointly developed with the working group.

The proposal consists of lowering VOC limits for several existing coating categories and two new categories. The proposal also establishes VOC limits for colorants. In addition, staff is proposing two new definitions and several updates to existing definitions. The proposal also includes updates to several test methods to reflect the latest versions. Additionally, the proposal includes an anti-bundling provision to prevent packaging of exempt small containers to avoid meeting coating category limits.

New Coating Categories

The proposed SCM establishes limits for new categories and revises limits for existing categories. The new categories include Building Envelope Coatings, Exterior Stains, and Colorants added to architectural coatings. The proposed SCM revises the existing limits for several existing categories.

Building Envelope Coatings is a new category. Staff is proposing the following definition for this category:

Building Envelope Coatings are fluid applied coatings applied to the building envelope to provide a continuous barrier to air or vapor leakage through the building envelope that separates conditioned from unconditioned spaces. Building Envelope Coatings are applied to diverse materials including, but not limited to, concrete masonry units (CMU), oriented stranded board (OSB), gypsum board, and wood substrates and must meet the following performance criteria:

(A) Air Barriers formulated to have an air permeance not exceeding 0.004 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.004 cfm/ft² @ 1.57 psf), [0.02 liters per square meter per second under a pressure differential of 75 Pa (0.02 L/(s-m²) @ 75 Pa)] when tested in accordance with ASTM E2178; and/or

(B) Water Resistive Barriers formulated to resist liquid water that has penetrated a cladding system from further intruding into the exterior wall assembly and is classified as follows:

- (i) Passes water resistance testing according to ASTM E331, and*
- (ii) Water vapor permeance is classified in accordance with ASTM E96/E96M.*

Staff is proposing to set a VOC limit for exterior stains. A new definition for Interior Stains is proposed to distinguish between interior and exterior stains. A new VOC limit of a 100 grams per liter is proposed for exterior stains, while the existing limit of 250 grams per liter remains applicable for Interior Stains. Dual purpose stains intended for both exterior and interior applications would be required to meet the exterior stain limit.

Colorants

VOC limits are proposed for colorants added to architectural coatings. A VOC limit of 50 grams per liter is proposed for colorant added to architectural coatings not meeting the definition of Industrial Maintenance Coating. For Architectural Coatings meeting the definition of Industrial Maintenance, separate limits are proposed for solvent-based and waterborne coatings. Table 1 presents the VOC limits for the proposed new categories and colorants.

Proposed Changes to Existing Coating Categories

In addition to establishing new categories, the proposed SCM includes proposed revised limits for eight of the existing categories. The proposed revised limits are equivalent to limits already in effect in the South Coast AQMD. Table 1 lists the categories and the proposed revised VOC limits.

Other Coating Categories

Staff considered lowering VOC limits for several other categories but decided not to propose lower limits for a number of reasons. For Zinc Rich Primers, Metallic Pigmented Coatings, and Rust Preventative Coatings it appears that exempt compounds such as tert-Butyl acetate and Parachlorobenzotrifluoride (PCBTF) are relied upon to achieve lower VOC levels. Because of toxicity concerns with these exempt compounds we are not proposing lower VOC limits for these categories. Staff considered lower VOC limit for Industrial Maintenance Coatings as well. While this category employs less exempts it still relies on these compounds to formulate higher performance products. Thus, we are not proposing to lower the VOC limit for this category.

Air Quality Benefits

The proposed SCM reduces VOC emissions by 1.44 tons per day (TPD) from 2007 SCM areas and 2.4 tons per day statewide in 2022. Table 1 includes the reductions for each category. Because the proposed SCM VOC limits are equivalent to those in effect the South Coast AQMD, no reductions would be experienced in the South Coast AQMD. Staff anticipates the proposed SCM would result a VOC reduction of 2.4 tons per day statewide, except in the South Coast AQMD.

**Table 1
Estimated Complying Market Share and VOC Emissions Reductions
(Effective 1/1/2022)**

Coating Category	Current Limit (g/l)*	Proposed Limit (g/l)*	% Complying Market Share (excl quarts)	Emission Reductions in 2007 SCM areas TPD**	Emission Reductions Statewide TPD**
New Coating Categories:					
Building Envelope Coatings	NA	50	84	0.01	0.01
Stains: Exterior	NA	100	73	0.43	0.67
Existing Coating Categories:					
Aluminum Roof	400	100	70	0.20	0.27
Dry Fog Coatings	15	50	67	0.03	0.05
Fire Resistive Coatings	350	150	67	0.02	0.02
Floor Coatings	100	50	75	0.01	0.04
Form Release Compounds	250	100	83	0.08	0.18
Nonflat Coatings	100	50	93	0.41	0.67
Nonflat-High Gloss Coatings	150	50	84	0.02	0.16
Waterproofing Membranes	250	100	67	0.11	0.20
Colorants added to:					
Architectural Coatings, excluding IM Coatings	NA	50		0.12	0.13
Solvent-Based IM	NA	600			
Waterborne IM	NA	50			
Totals:				1.44	2.40

*Grams of VOC per liter coating, less water and exempt compounds

**Assumes a growth rate of 1% per year

IM-Industrial Maintenance