Department of the Environment

TECHNICAL SUPPORT DOCUMENT

FOR

COMAR 26.11.39 – Architectural and Industrial Maintenance (AIM) Coatings

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Purpose of New Regulation

The primary purpose of this regulation is to establish new VOC content limits and standards for a variety of architectural and industrial maintenance (AIM) coatings made available for sale and use in Maryland.

Submission to EPA as Revision to Maryland's SIP (or 111(d) Plan, or Title V Program)

This action will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan (SIP).

Background

In December 1999, the U.S. Environmental Protection Agency (EPA) informed Maryland and several other Northeastern and Mid-Atlantic states of the Ozone Transport Region (OTR) that their air quality plans did not provide for emission reductions sufficient to attain the one-hour ozone standard by 2005. In order to address shortfalls in achieving the one-hour ozone standard by 2005, Maryland promulgated several measures to achieve reductions of at least 13 tons per day of volatile organic compounds (VOCs) in the Baltimore Nonattainment Area.

EPA stated that it would grant additional time to implement new measures if those states pursued regional strategies to control ozone and its precursors. In response to this EPA mandate, the Ozone Transport Commission (OTC) developed several VOC reduction measures that were formally supported by the OTC Commissioners in March 2001.

One of the VOC reduction measures developed by a state-led workgroup was a model rule for AIM coatings, which was based upon existing rules developed by the California Air Resources Board (CARB). The model rule was developed to address VOC reduction needs in the OTR, and was based on an analysis and review of proposed coating limits and the availability of compliant coatings on the market. In 2004, the Maryland Department of the Environment (MDE) adopted COMAR 26.11.33 - *Architectural Coatings* which established stringent VOC content limits for architectural and industrial coatings, established recordkeeping and container labeling requirements for manufactures of paints and coatings, and painting practices for the use and application of coatings. COMAR 26.11.33 is based on the model rule developed by the OTC.

In 2011, the OTC developed the amended OTC model rule (Phase II) in consultation with a state-led workgroup to replace the 2001 AIM model rule. Phase II of the AIM model rule was developed for states that need additional VOC emission reductions for the attainment or maintenance of federal ambient air quality standards. The proposed regulation is based on the OTC Phase II model rule, and is an update to the current version of COMAR 26.11.33 – *Architectural Coatings*. The proposed regulations lowers the VOC content limits for certain coating categories, eliminates several coating categories while creating new ones, and improves definitions for many coating categories.

Sources Affected and Location

The new regulations applies to any person manufacturers, blends, thins, supplies, sells, offers for sale, repackages for sale, or applies architectural and industrial maintenance coatings in Maryland. This includes manufacturers and distributors of architectural and industrial coatings that are made available for sale and use in Maryland, painting contractors and government agencies specifying coatings.

Requirements and Standards in the Proposed Regulation

This regulation establishes the following VOC content limits and standards for architectural and industrial maintenance coatings:

VOC Content Limits.
All architectural and industrial coatings made available for sale and use in Maryland must meet specific VOC limits as specified in the regulation, minus water and exempt compounds. The proposed regulation sets VOC content limits for 48 specific categories of architectural and industrial maintenance coatings which are provided in Table 1.

Table 1. - VOC Content Limits for Architectural and Industrial Maintenance Coatings[†].

Coating Category	VOC Content Limit (grams per liter)
Flat coatings	50
Non-flat coatings	100
Non-flat – high gloss coatings	150
Aluminum roof coatings	450
Basement specialty coatings	400
Bituminous roof coatings	270
Bituminous roof primers	350
Bond breakers	350
Calcimine recoater	475
Concrete curing compounds	350
Concrete/masonry sealers	100
Concrete surface retarders	780
Conjugated oil varnish	450
Conversion varnish	725
Driveway sealers	50
Dry fog coatings	150
Faux finishing coatings	350

Fire-resistive coatings	350
Floor coatings	100
Form-release coatings	250
Graphic arts coatings (Sign paints)	500
High-temperature coatings	420
Impacted immersion coatings	780
Industrial maintenance coatings	250
Low-solids coatings	120
Magnesite cement coatings	450
Mastic texture coatings	100
Metallic pigmented coatings	500
Multi-color coatings	250
Nuclear coatings	450
Pre-treatment wash primers	420
Primers, sealers, and undercoaters	100
Reactive penetrating sealers	350
Reactive penetrating carbonate stone sealers	500
Recycled coatings	250
Roof coatings	250
Rust preventative coatings	250
Shellacs:	
• Clear	730
• Opaque	550
Specialty primers, sealers, and undercoaters	100
Stains	250
Stone consolidant	450
Swimming pool coatings	340
Thermoplastic rubber coatings and mastic	550
Traffic marking coatings	100
Tub and tile refinish coatings	420
Waterproofing membranes	250

Wood coatings	275
Wood preservatives	350
Zinc-rich primers	340

†Comparison of existing and proposed VOC content limits for architectural and industrial maintenance coatings can be found in Appendix A.

Most Restrictive Limit.

This provision in the regulation stipulates that if anywhere on the container of any architectural coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature supplied by a manufacturer or anyone acting on their behalf, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one coating categories, then the most restrictive VOC content limit applies. This provision does not apply to the following coating categories:

- Aluminum roof coatings
- Bituminous roof primers
- High-temperature coatings
- Industrial maintenance coatings
- Low-solids coatings
- Metallic pigmented coatings
- Pretreatment wash primers
- Shellacs
- Specialty primers, sealers, and undercoaters
- Wood coatings
- Wood preservatives
- Zinc-rich primers
- Calcimine recoaters
- Impacted immersion coatings
- Nuclear coatings
- Thermoplastic rubber coatings and mastic
- Concrete surface retarders

Container Labeling Requirements.

Containers or labels affixed the containers of architectural and industrial maintenance coatings are that are sold, distributed, or made available for use in Maryland are required to prominently display the following product information:

- Date Code. The proposed regulation requires manufacturers to label all coating containers with the date that the coating was manufactured or a date code that represents the date of manufacture. Manufacturers must file an explanation of date codes with the Department. These are a continuation of the requirements found in the current regulation (COMAR 26.11.33 – *Architectural Coatings*).

- Thinning Recommendations. The proposed regulation continues the requirement found in the current regulation that for each manufacturer to label all coating containers with the manufacturer's recommendations regarding the addition of thinning solvents. This requirement does not apply to the use of water as a thinner.

- VOC Content. The proposed regulation requires each manufacturer to label all coating containers with the VOC content (displayed in grams of VOC per liter of coating). VOC content can be based on the maximum VOC content as determined from all potential product formulations, formulation data or the results of laboratory analysis based on specified test methods. If the manufacturer does not recommend thinning, the label must display the VOC content as supplied. If the manufacturer recommends thinning, the label must display the VOC content including the maximum amount of thinning solvent recommended by the manufacturer. If the coating is a multi-component product, the label must display the VOC content as mixed or catalyzed. These requirements in the proposed regulation clarify and expand upon those found under the current regulation.

- Labeling Requirements for Specific Coating Categories:

    - Faux finishing coatings – requires the labels of all faux finishing coatings display the statement "This product can only be sold or used as part of a faux finishing coating system".

    - Industrial maintenance coatings – requires all industrial maintenance coating containers be labeled with at least one of the following phrases: "For industrial use only"; "For professional use only"; "Not for residential use"; or "Not intended for residential use".

    - Rust preventive coatings – requires all rust preventative coating containers be labeled with the phrase "For Metal Substrates Only".

    - Specialty primers, sealers, and undercoaters – requires all specialty primer, sealer, and undercoater containers be labeled with one or more of the following descriptions: "For fire-damaged substrates"; "For smoke-damaged substrates"; or "For water-damaged substrates".

    - Non-flat – high gloss coatings – requires all non-flat – high gloss coating containers be labeled with the phrase "High Gloss".

    - Reactive penetrating sealers – requires the labels of all Reactive Penetrating Sealers display the statement "Reactive Penetrating Sealer".

    - Reactive penetrating carbonate stone sealers - requires the labels of all reactive penetrating carbonate stone sealers display the statement "Reactive Penetrating Carbonate Stone Sealer".

- Stone consolidants – requires the labels of all stone consolidants display the statement “Stone Consolidant – For Professional Use Only”.

- Wood coatings – requires the labels of all wood coatings display the statement “For Wood Substrates Only”.

- Zinc rich primers – requires the labels of all zinc-rich primers display the statement “For Professional Use Only”.

Sell-Through of Coatings.
The proposed regulation allows non-compliant architectural and industrial maintenance coatings listed in Table 1 that were manufactured prior to January 1, 2017 to be sold, supplied, or offered for sale until January 1, 2020 provided the coating complied with the standards in effect at the time the coating was manufactured. Coatings that comply with the standards in effect at the time of manufacture may be used at any time.

For example, if a flat coating is manufactured in 2015, it would be subject to a VOC limit of 100 g/L under COMAR 26.11.33 – *Architectural Coatings*. If that coating complies with the 100 g/l limit, it could be sold until 2018 under the 3-year sell-through provision. However, if that flat coating is manufactured after December 31, 2016, it must comply with the 50 g/L VOC limit under the proposed regulation. The sell-through exemption for coatings does not apply to coatings that do not display the date or date code required under Regulation .06B (Container Labeling Requirements - Date Code).

Painting Practices.
This provision in the proposed regulation stipulates that coating containers and any VOC-containing materials (e.g. thinners and cleaning solvents) used for cleaning or thinning are to be closed when not in use.

Thinning.
If a person adds thinners to a coating, the coating must not exceed the applicable VOC limit as specified in Table 1.

Coatings Not Listed in Regulation .05 (VOC Content Limits for Architectural and Industrial Maintenance Coatings).
A coating does not meet any of the definitions for the specialty categories listed in Table 1, that coating will be classified as flat, non-flat, or non-flat-high gloss, based on its gloss level, and the corresponding VOC content limit will apply.

Reporting Requirements.
All manufacturers are required to keep records to demonstrate compliance with the regulation. The information includes, but is not limited to:

- The name and mailing address of the manufacturer
- The name address and telephone number of a contact person

- The name of the coating product as it appears on the label and the application coating category
- A description whether the product is marketed for interior or exterior use or both
- The number of gallons sold in the State in containers greater than 1 liter and equal to or less than 1 liter
- The VOC actual content and VOC regulatory content in grams per liter.
    - If thinning is recommended, list the VOC actual content and VOC regulatory content after maximum recommended thinning.
    - If containers less than one liter have a different VOC content than containers greater than one liter, list separately.
    - If the coating is a multi-component product, provide the VOC content as mixed or catalyzed.
- The names and CAS numbers of the VOC constituents in the product
- The names and CAS numbers of any compounds in the product that are VOC-exempt compounds
- A description whether the product is marketed as solventborne, waterborne, or 100 percent solids;
- A description of resin or binder in the product
- A description whether the coating is a single-component or multi-component product
- The density of the product in pounds per gallon
- The percent by weight of solids, all volatile materials, water, and any compounds in the product that are VOC-exempt compounds
- The percent by volume of solids, water, and any compounds in the product that are VOC-exempt compounds

Records must be made available to the Department within 180 days of request.

<u>New Coatings Categories.</u>
This provision states that beginning May 1, 2016, the following new coatings categories will be considered in compliance if the coating meets the applicable VOC limits and requirements:

- Aluminum roof coatings;
- Basement specialty coatings;
- Concrete/masonry sealers;
- Conjugated oil varnish;
- Driveway sealers;
- Reactive penetrating sealer;
- Reactive penetrating carbonate stone sealers
- Stone consolidant;
- Tub and tile refinishing coating;
- Waterproofing membranes;
- Wood coatings; and
- Zinc-rich primers.

Expected Emissions Reductions

Based upon the OTC Model Rule for AIM Coatings (Phase II), the proposed regulation has an estimated statewide VOC emissions reduction potential of 6 percent from the architecture and industrial maintenance coatings category of the current baseline emissions inventory.

Based upon calculations and emissions estimates by the Department, the projected Maryland's 2018 baseline emissions inventory indicates that VOC emissions from architecture and industrial maintenance coatings total 34 tons/day. The proposed regulation will reduce 2 tons/day of VOC emissions through implementation of the coating limits and standards in the proposed regulation.

Economic Impact on Affected Sources, the Department, other State Agencies, Local Government, other Industries or Trade Groups, the Public

Businesses that supply resins, solvents, other ingredients and equipment to coating manufacturers may be potentially impacted by the new regulation. Companies – which include home improvement retailers, painting contractors, government agencies, and consumers who distribute, sell or use architectural and industrial maintenance coatings also may be potentially impacted by the new regulation. The Department believes that the implementation date will give manufacturers the needed time to both reformulate coatings and make coatings compliant with the VOC content limits and standards in the regulation available to the public. As similar standards are adopted and implemented in other states, the costs of compliance are expected to decrease over time.

There will be no additional impact on the Department as a result of this regulation.

Economic Impact on Small Businesses

There is no small business in Maryland that has been identified to incur substantial economic impact as a result of the proposed action. The affected sources are likely to meet the standards at minimum cost.

Equivalent Federal Standards

U.S. EPA
40 CFR Part 59, Subpart D - *National Volatile Organic Compound Emission Standards for Architectural Coatings* (1998) establishes nationwide VOC content limits for manufacturers of architectural coatings. The rule also includes the following requirements and provisions for architectural coatings:

- Container labeling requirements for architectural coatings.

- A small container exemption that allows the sale of coatings above the maximum VOC content limits if the coatings are packaged in containers of one liter or less.

- A sell-through provision that allows the sale of architectural coatings above the maximum VOC content limits if manufactured prior to the rule's effective date (September 13, 1999).

- An exceedance fee provision which manufacturers can choose to pay an exceedance fee to the EPA for non-compliant coatings (above the maximum VOC content limits).

The applicable VOC content limits and standards in the proposed regulation are more stringent than those found in the federal regulation. A comparison of the VOC content limits for coatings in the federal rule with those found in the proposed regulation can be found under Appendix B (Comparison to EPA National Rule).

Proposed Regulation

Title 26 DEPARTMENT OF THE ENVIRONMENT

Subtitle 11 AIR QUALITY

Chapter 39 Architectural and Industrial Maintenance (AIM) Coatings

Authority: Environmental Article, §§1-404, 2-103 and 2-301—2-303, Annotated Code of Maryland

.01 Applicability and Exemptions.

A. Except as provided in §B of this regulation, this chapter applies to a person who:

(1) Supplies, sells, offers for sale, or manufactures an architectural coating for use within the State; or

(2) Uses or applies an architectural coating within the State.

B. This chapter does not apply to the following products:

(1) Any architectural coating that is supplied, sold, offered for sale or manufactured for:

(a) Use outside of the State; or

(b) Shipment to other manufacturers for reformulation or repackaging.

(2) Any aerosol coating product; or

(3) An architectural coating that is sold in a container with a volume of 1 liter (1.057 quart) or less, including kits of containers of different colors, types, or categories of coatings and two component products.

C. The exemption in §B(3) of this regulation does not include:

(1) Bundling of containers 1 liter or less, which are sold together as a unit; or

(2) Coatings with packaging or marketing which implies that multiple containers 1 liter or less be combined into one container.

D. The exemption in §B(3) of this regulation includes multiple containers of 1 liter or less that are packaged and shipped together, but are sold individually.

E. Except as provided in Regulation .04H of this chapter, this chapter is effective on January 1, 2017.

.02 Test Methods—Incorporation by Reference.

A. In this chapter, the following documents are incorporated by reference.

B. Documents Incorporated.

(1) Fire-Resistance Rating. The fire-resistance rating of a fire-resistive coating shall be determined by ASTM Test Method E119-08, "Standard Test Methods for Fire Tests of Building Construction and Materials".

(2) Gloss Determination. The gloss of a coating shall be determined by ASTM Test Method D523-89(1999), "Standard Test Method for Specular Gloss".

(3) Metal Content of Coatings. The metallic content of a coating shall be determined by South Coast Air Quality Management District (SCAQMD) Method 318-95, "Determination of Weight Percent Elemental Metal in Coatings by X-Ray Diffraction", (Approved July 1996) SCAQMD "Laboratory Methods of Analysis for Enforcement Samples".

(4) Acid Content of Coatings. The acid content of a coating shall be determined by ASTM Test Method D1613-06, "Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products".

(5) Exempt Compounds—Siloxanes. Exempt compounds that are cyclic, branched, or linear, completely methylated siloxanes, shall be analyzed as exempt compounds by methods referenced in ASTM D3960-05 "Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings" or Bay Area Air Quality Management District (BAAQMD) Method 43, "Determination of Volatile Methylsiloxanes in Solvent Based Coatings, Inks and Related Materials," BAAQMD Manual of Procedures, Volume III, adopted November 6, 1996.

(6) Exempt Compounds—Parachlorobenzotrifluoride (PCBTF). The exempt compound parachlorobenzotrifluoride, shall be analyzed by methods referenced in ASTM D3960-05 "Standard Practice for Determining Volatile Organic Compound (VOC)

Content of Paints and Related Coatings" or BAAQMD Method 41 "Determination of Volatile Organic Compounds in Solvent Based Coatings and Related Materials Containing Parachlorobenzotrifluoride," BAAQMD Manual of Procedures, Volume III, adopted December 20, 1995.

(7) Exempt Compounds. The content of compounds exempt under U.S. EPA Method 24 shall be analyzed by methods referenced in ASTM D3960-05 "Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings" or South Coast Air Quality Management District (SCAQMD) Method 303-91 "Determination of Exempt Compounds (Revised 1993)", SCAQMD Laboratory Methods of Analysis for Enforcement Samples.

(8) VOC Content of Coatings. The VOC content of a coating shall be determined by U.S. EPA Method 24 as it exists in Appendix A-7 of 40 CFR Part 60, "Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings".

(9) Alternative VOC Content of Coatings. The VOC content of coatings may be analyzed by either U.S. EPA Method 24 as it exists in Appendix A-7 of 40 CFR Part 60, "Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings" or SCAQMD Method 304-91 "Determination of Volatile Organic Compounds (VOC) in Various Materials (Revised 1996)", SCAQMD "Laboratory Methods of Analysis for Enforcement Samples".

(10) Methacrylate Traffic Marking Coatings. The VOC content of methacrylate multicomponent coatings used as traffic marking coatings shall be analyzed by the procedures in 40 CFR Part 59, Subpart D, Appendix A, "Determination of Volatile Matter Content of Methacrylate Multicomponent Coatings Used as Traffic Marking Coatings".

(11) Radiation Resistance - Nuclear Coatings. The radiation resistance of a nuclear coating shall be determined by ASTM D4082-02 "Standard Test Method for Effects of Gamma Radiation on Coatings for Use in Light-Water Nuclear Power Plants"

(12) Chemical Resistance - Nuclear Coatings. The chemical resistance of nuclear coatings shall be determined by ASTM D3912-95(2001) "Standard Test Method for Chemical Resistance of Coatings Used in Light-Water Nuclear Power Plants".

(13) Hydrostatic Pressure for Basement Specialty Coatings. The hydrostatic pressure resistance for basement specialty coatings shall be analyzed using ASTM D7088-04, "Standard Practice for Resistance to Hydrostatic Pressure for Coatings Used in Below Grade Applications Applied to Masonry".

(14) Tub and Tile refinishing Coating Adhesion. The adhesion of tub and tile coating shall be determined by ASTM D4585-99, "Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation" and ASTM D3359-02, "Standard Test Methods for Measuring Adhesion by Tape Test".

(15) Tub and Tile Refinish Coating Hardness. The hardness of tub and tile refinish coating shall be determined by ASTM D3363-05, "Standard Test Method for Film Hardness by Pencil Test".

(16) Tub and Tile Refinish Coating Abrasion Resistance. Abrasion resistance of tub and tile refinish coating shall be analyzed by ASTM D4060-07, "Standard Test Methods for Abrasion Resistance of Organic Coatings by the Taber Abraser".

(17) Tub and Tile Refinish Coating Water Resistance. Water resistance of tub and tile refinish coatings shall be determined by ASTM D4585-99, "Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation" and ASTM D714-02e1, "Standard Test Method for Evaluating Degree of Blistering of Paints".

(18) Waterproofing Membrane. Waterproofing membrane shall be tested by ASTM C836-06, "Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course".

(19) Mold and Mildew Growth for Basement Specialty Coatings. Mold and mildew growth resistance for basement specialty coatings shall be determined by ASTM D3273-00, "Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber" and ASTM D3274-95, "Standard Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Microbial (Fungal or Algal) Growth or Soil and Dirt Accumulation".

(20) Reactive Penetrating Sealer Water Repellency. Reactive penetrating sealer water repellency shall be analyzed by ASTM C67-07, "Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile"; or ASTM C97-02, "Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone"; or ASTM C140-06, "Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units".

(21) Reactive Penetrating Sealer Water Vapor Transmission. Reactive penetrating sealer water vapor transmission shall be analyzed ASTM E96/E96M-05, "Standard Test Method for Water Vapor Transmission of Materials".

(22) Reactive Penetrating Sealer - Chloride Screening Applications. Reactive penetrating sealers shall be analyzed by National Cooperative Highway Research Report 244 (1981), "Concrete Sealers for the Protection of Bridge Structures".

(23) Stone Consolidants. Stone consolidants shall be tested using ASTM E2167-01, "Standard Guide for Selection and Use of Stone Consolidants".

.03 Definitions.

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

(1) "Adhesive" means a chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.

(2)"Aerosol coating product" means a pressurized coating product containing pigments or resins that:

(a) Dispenses product ingredients by means of a propellant; and

(b) Is packaged in a disposable can for handheld application, or for use in specialized equipment for ground traffic/marking applications.

(3) "Aluminum roof coating" means a coating labeled and formulated exclusively for application to roofs and containing at least 84 grams of elemental aluminum pigment per liter of coating (at least 0.7 pounds per gallon).

(4) Appurtenance.

(a) "Appurtenance" means an accessory to a stationary structure that is coated at the site of installation, whether installed or detached.

(b) "Appurtenance" includes:

(i) Bathroom and kitchen fixtures;

(ii) Cabinets;

(iii) Concrete forms;

(iv) Doors;

(v) Elevators;

(vi) Fences;

(vii) Hand railings;

(viii) Heating equipment, air conditioning equipment, and other fixed mechanical equipment or stationary tools;

(ix) Lampposts;

(x) Partitions;

(xi) Pipes and piping systems;

(xii) Rain gutters and downspouts;

(xiii) Stairways;

(xiv) Fixed ladders;

(xv) Catwalks and fire escapes; and

(xvi) Window screens.

(5) Architectural Coating.

(a) "Architectural coating" means a coating to be applied to:

(i) Stationary structures or their appurtenances at the site of installation;

(ii) Portable buildings at the site of installation;

(iii) Pavements; or

(iv) Curbs.

(b) "Architectural coating" does not include:

(i) Coatings applied in shop applications or to non-stationary structures such as airplanes, ships, boats, railcars, or automobiles; or

(ii) Adhesives.

(6) “Basement specialty coating" means a clear or opaque coating that:

(a) Is labeled and formulated for application to concrete and masonry surfaces to provide a hydrostatic seal for basements and other below-grade surfaces;

(b) Is capable of withstanding at least 10 psi of hydrostatic pressure;

(c) Is resistant to mold and mildew growth; and

(d) Achieves a microbial growth rating of 8 or more.

(7) "Bituminous roof coating" means a coating that:

(a) Incorporates bitumens;

(b) Is labeled and formulated exclusively for roofing; and

(c) Is intended for the primary purpose of preventing water penetration.

(8) "Bituminous roof primer" means a primer that:

(a) Incorporates bitumens;

(b) Is labeled and formulated exclusively for roofing; and

(c) Is intended for one of the following purposes:

(i) Preparing a weathered or aged surface; or

(ii) Improving the adhesion of subsequent surfacing components.

(9) "Bond breaker" means a coating labeled and formulated for application between layers of concrete to prevent a freshly poured top layer of concrete from bonding to the layer over which it is poured.

(10) "Calcimine recoater" means a flat solvent borne coating formulated and recommended specifically for recoating calcimine-painted ceilings and other calcimine-painted substrates.

(11) Coating.

(a) "Coating" means a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes.

(b) "Coating" includes paints, varnishes, sealers, and stains.

(12) "Colorant" means a concentrated pigment dispersion in water, solvent, or binder that is added to an architectural coating to produce a desired color.

(13) "Concrete curing compound" means a coating labeled and formulated for application to freshly poured concrete to perform one or more of the following functions:

(a) Retard the evaporation of water; or

(b) Harden or dustproof the surface of freshly poured concrete.

(14) "Concrete/masonry sealer" means a clear or opaque coating that is labeled and formulated primarily for application to concrete and masonry surfaces to perform one or more of the following functions:

(a) Prevent penetration of water;

(b) Provide resistance against abrasion, alkalis, acids, mildew, staining, or ultraviolet light; or

(c) Harden or dustproof the surface of aged or cured concrete.

(15) "Concrete surface retarder" means a mixture of retarding ingredients such as extender pigments, primary pigments, resin, and solvent that interact chemically with the cement to prevent hardening on the surface where the retarder is applied, allowing the retarded mix of cement and sand at the surface to be washed away to create an exposed aggregate finish.

(16) Conjugated oil varnish.

(a) "Conjugated oil varnish" means a clear or semi-transparent wood coating that:

(i) Is labeled as such;

(ii) Is based on a natural occurring conjugated vegetable oil (tung oil) and modified with other natural or synthetic resins, with a minimum of 50 percent of the resins solids consisting of conjugated oil;

(iii) Is supplied as a single component that penetrates and seals the wood;

(iv) Results in film formation due to polymerization of the oil; and

(v) Contains small amounts of pigment to control the final gloss or sheen.

(b) "Conjugated oil varnish" does not include lacquers or shellacs.

(17) "Conversion varnish" means a clear acid curing coating with an alkyd, or other resin blended with amino resins that:

(a) Is supplied as a single component or two-component product designed for professional application to wood flooring to produce a hard, durable, clear finish; and

(b) Results in a film formation from an acid-catalyzed condensation reaction, affecting a transetherification of the reactive ethers of the amino resins.

(18) "Driveway sealer" means a coating labeled and formulated for application to worn asphalt driveway surfaces to perform one or more of the following functions:

(a) Fill cracks;

(b) Seal the surface to provide protection; or

(c) Restore or preserve the appearance.

(19) "Dry fog coating" means a coating labeled and formulated only for spray application such that overspray droplets dry before subsequent contact with incidental surfaces in the vicinity of the surface coating activity.

(20) "Exempt compound" means a compound identified as exempt under the definition of volatile organic compound (VOC) under COMAR 26.11.01.01B(53).

(21) "Faux finishing coating" means a coating labeled and formulated to meet one or more of the following criteria:

(a) A glaze or textured coating used to create artistic effects, including:

(i) Dirt;

(ii) Suede;

(iii) Old age;

(iv) Smoke damage;

(v) Simulated marble; and

(vi) Wood grain;

(b) A decorative coating used to create a metallic, iridescent, or pearlescent appearance that contains at least 48 grams of pearlescent mica pigment or other iridescent pigment per liter of coating as applied (at least 0.4 pounds per gallon);

(c) A decorative coating used to create a metallic appearance that contains less than 48 grams of elemental metallic pigment per liter of coating as applied (less than 0.4 pounds per gallon);

(d) A decorative coating used to create a metallic appearance that:

(i) Contains greater than 48 grams of elemental metallic pigment per liter of coating as applied (greater than 0.4 pounds per gallon); or

(ii) Requires a clear topcoat to prevent the degradation of the finish under normal use conditions.

(e) A clear topcoat sold and used solely as part of a faux finishing coating system to seal and protect a faux finishing coating that meets one or more of the requirements in §B(21)(a)—(d) of this regulation.

(22) Fire-Resistive Coating.

(a) "Fire-resistive coating" means a coating that has been labeled and formulated to protect structural integrity by increasing the fire endurance of interior or exterior structural materials.

(b) "Fire-resistive coating" includes sprayed fire resistive materials and intumescent fire coatings that are used to bring structural materials into compliance with federal, state, and local building code requirements.

(23) "Flat coating" means a coating that is not defined under any other definition in this regulation and that registers a gloss of less than 15 on an 85-degree meter or less than 5 on a 60-degree meter.

(24) "Floor coating" means an opaque coating that is labeled and formulated for application to flooring such as decks, porches, steps, garage floors and other horizontal surfaces that may be subjected to foot traffic.

(25) "Form-release coating" means a coating labeled and formulated for application to a form to prevent freshly poured concrete from bonding to the form.

(26) Graphic Arts Coating (Sign Paint).

(a) "Graphic arts coating (sign paint)" means a coating labeled and formulated for hand-application, using brush, airbrush, or roller techniques to one or more of the following:

(i) Indoor and outdoor signs; and

(ii)Murals.

(b) "Graphic arts coating (sign paint)" includes letter enamels, poster colors, copy blockers, and bulletin enamels.

(c) "Graphic arts coating (sign paint)" does not include coatings applied to structural components.

(27) "High-temperature coating" means a high performance coating labeled and formulated for application to substrates exposed continuously or intermittently to temperatures above 204°C (400°F).

(28) "Impacted immersion coating" means a high performance maintenance coating that is:

(a) Formulated and recommended for application to steel structures subject to immersion in turbulent, debris-laden water; and

(b) Specifically resistant to high-energy impact damage caused by floating ice or debris.

(29) Industrial maintenance coating.

(a) "Industrial maintenance coating" means a high performance architectural coating formulated for application to substrates exposed to one or more of the following extreme environmental conditions:

(i) Immersion in water, wastewater, chemical solutions (aqueous and non-aqueous solutions), or chronic exposures of interior surfaces to moisture condensation;

(ii) Acute or chronic exposure to corrosive, caustic, or acidic agents, or to chemicals, chemical fumes, or chemical mixtures or solutions;

(iii) Frequent exposure to temperatures above 121°C (250°F)

(iv) Frequent and heavy abrasion, including mechanical wear and scrubbing with industrial solvents, cleansers, or scouring agents; or

(v) Exterior exposure of metal structures and structural components.

(b)"Industrial maintenance coating includes primers, sealers, undercoaters, intermediate coats, and topcoats.

(30) "Low-solids coating" means a coating containing 0.12 kilogram or less of solids per liter (1 pound or less of solids per gallon) of coating material as recommended for application by the manufacturer.

(31) "Magnesite cement coating" means a coating labeled and formulated for application to magnesite cement decking to protect the magnesite cement substrate from erosion by water.

(32) "Mastic texture coating" means a coating:

(a) Labeled and formulated to cover holes and minor cracks and to conceal surface irregularities; and

(b) Applied in a single coat of at least 10 mils (0.010 inch) dry film thickness.

(33) "Metallic pigmented coating" means a coating labeled and formulated to provide a metallic appearance that contains at least 48 grams of elemental metallic pigment (excluding zinc) per liter of coating as applied (0.4 pounds per gallon).

(34) "Multi-color coating" means a coating that is:

(a) Packaged in a single container; and

(b) Labeled and formulated to exhibit more than one color when applied in a single coat.

(35) "Non-flat coating" means a coating that:

(a) Is not defined under any other definition in this regulation; and

(b) Registers a gloss of 15 or greater on an 85-degree meter and 5 or greater on a 60-degree meter.

(36) "Non-flat—high gloss coating" means a non-flat coating that registers a gloss of 70 or greater on a 60-degree meter.

(37) "Nuclear coating" means a protective coating that:

(a) Is formulated and recommended to seal porous surfaces that otherwise would be subject to intrusion by radioactive materials;

(b) Is resistant to long-term (service life) cumulative radiation exposure;

(c) Is relatively easy to decontaminate; and

(d) Is resistant to various chemicals to which the coatings are likely to be exposed.

(38) "Post-consumer coating" means finished coatings generated by a business or consumer that have served their intended end uses, and are recovered from or otherwise diverted from the waste stream for the purpose of recycling.

(39) "Pre-treatment wash primer" means a primer that:

(a) Contains a minimum of 0.5 percent acid, by weight; and

(b) Is labeled and formulated for application directly to bare metal surfaces to provide corrosion resistance and promote adhesion of subsequent topcoats.

(40) "Primer, sealer and undercoater" means a coating labeled and formulated for one or more of the following purposes:

(a) To provide a firm bond between the substrate and subsequent coatings;

(b) To prevent subsequent coatings from being absorbed by the substrate;

(c) To prevent harm to subsequent coatings by materials in the substrate;

(d) To provide a smooth surface for the subsequent application of coatings;

(e) To provide a clear finish coat to seal the substrate; or

(f) To block materials from penetrating into or leaching out of a substrate.

(41) Reactive penetrating sealer.

(a) "Reactive penetrating sealer" means a clear or pigmented coating that is labeled and formulated for application to above-grade concrete and masonry substrates to provide protection from water and waterborne contaminants, including:

(i) Alkalis;

(ii) Acids; and

(iii) Salts.

(b) “Reactive penetrating sealers” meet the following criteria:

(i) Penetrate into concrete and masonry substrates and chemically react to form covalent bonds with naturally occurring minerals in the substrate;

(ii) Line the pores of concrete and masonry substrates with a hydrophobic coating, but do not form a surface film;

(iii) Improve water repellency at least 80 percent after application on a concrete or masonry substrate as verified on standardized test specimens; and

(iv) Do not reduce the water vapor transmission rate by more than 2 percent after application on a concrete or masonry substrate.

(c) “Reactive penetrating sealers” labeled and formulated for vehicular traffic surface chloride screening applications shall meet the performance criteria listed in the National Cooperative Highway Research Report 244 (1981).

(42) Reactive Penetrating Carbonate Stone Sealer.

(a) “Reactive penetrating carbonate stone sealer” means a clear or pigmented coating that is labeled and formulated for application to above-grade carbonate stone substrates to provide protection from water and waterborne contaminants, including:

(i) Alkalis;

(ii) Acids; and

(iii) Salts.

(b) “Reactive penetrating sealers” meet the following criteria:

(i) Penetrate into carbonate stone substrates and chemically reacts to form covalent bonds with naturally occurring minerals in the substrate;

(ii) Line the pores of carbonate stone substrates with a hydrophobic coating, but do not form a surface film;

(iii) Improve water repellency at least 80 percent after application on a carbonate stone substrate; and

(iv) Do not reduce the water vapor transmission rate by more than 10 percent after application on a carbonate stone substrate.

(43) "Recycled coating" means an architectural coating formulated so that it contains a minimum of 50 percent by volume post-consumer coating, with a maximum of 50 percent secondary industrial materials or virgin materials.

(44)"Roof coating" means a non-bituminous coating labeled and formulated for application to roofs for the primary purpose of preventing water penetration, reflecting ultraviolet light, or reflecting solar radiation.

(45) Rust Preventive Coating.

(a) "Rust preventive coating" means a coating formulated to prevent the corrosion of metal surfaces for one or more of the following applications:

(i) Direct-to-metal coating; or

(ii) Coating intended for application over rusty, previously coated surfaces.

(b) "Rust preventive coating" does not include:

(i) Coatings that are required to be applied as a topcoat over a primer; or

(ii) Coatings that are intended for use on wood or any other nonmetallic surface.

(46) "Secondary industrial materials" means products or by-products of the paint manufacturing process that are of known composition and have economic value but can no longer be used for their intended purpose.

(47) "Shellac" means a clear or opaque coating formulated solely with the resinous secretions of the Lac beetle (Laciffer lacca), and formulated to dry by evaporation without a chemical reaction.

(48) "Shop application" means application of a coating to a product or a component of a product in or on the premises of a factory or a shop as part of a manufacturing, production, or repairing process (e.g. original equipment manufacturing coatings).

(49) "Specialty primer, sealer, and undercoater" means a coating that is formulated for application to a substrate to block water-soluble stains resulting from:

(a) Fire damage;

(b) Smoke damage; or

(c) Water damage.

(50) "Stain" means a semi-transparent, or opaque coating labeled and formulated to change the color of a surface, but not conceal the grain pattern or texture.

(51) "Stone consolidant" means a coating that:

(a) Is labeled and formulated for application to stone substrates to repair structures that have been damaged by weathering or other decay mechanisms; and

(b) Penetrates into stone substrates to create bonds between particles and consolidate deteriorated material.

(52) Swimming Pool Coating.

(a) “Swimming pool coating” means a coating labeled and formulated to coat the interior of swimming pools and to resist swimming pool chemicals.

(b) “Swimming pool coating” includes coatings used for swimming pool repair and maintenance.

(53) "Thermoplastic rubber coating and mastic" means a coating or mastic that:

(a) Is formulated and recommended for application to roofing or other structural surfaces; and

(b) Incorporates no less than 40 percent by weight of thermoplastic rubbers in the total resin solids.

(54) "Tint base" means colorant which is added to an architectural coating.

(55) "Traffic marking coating" means a coating labeled and formulated for marking and striping streets, highways, or other traffic surfaces such as curbs, berms, driveways, parking lots, sidewalks, and airport runways.

(56) "Tub and tile refinish coating" means a clear or opaque coating that:

(a) Is labeled and formulated exclusively for refinishing the surface of a bathtub, shower, sink, or countertop;

(b) Has a scratch hardness of 3H or harder and a gouge hardness of 4H or harder that is determined on bonderite 1000;

(c) Has a weight loss of 20 milligrams or less after 1000 cycles determined with CD-17 wheels on bonderite 1000;

(d) Withstands 1000 hours or more of exposure with few or no #8 blisters that is determined on unscribed borderite; and

(e) Has an adhesion rating of 4B or better after 24 hours of recovery that is determined on inscribed bonderite.

(57) "VOC actual" means the weight of VOC per volume of coating, including water and exempt compounds.

(58) VOC Content.

(a) "VOC content" means the weight of VOC per volume of coating and is VOC regulatory for all coatings except those in the low solids category.

(b) "VOC content" includes the following:

(i) The VOCs emitted during curing if the coating contains silanes, siloxanes, or other ingredients that generate ethanol or other VOCs during the curing process; and

(ii) The maximum amount of thinning solvent recommended by the manufacturer.

(59) "VOC regulatory" means the weight of VOC per volume of coating, less the volume of water and exempt compounds.

(60) Waterproofing Membrane.

(a) "Waterproofing membrane" means a clear or opaque coating that is labeled and formulated for application to concrete and masonry surfaces to provide a seamless waterproofing membrane that prevents any penetration of liquid water into the substrate.

(b) "Waterproofing membrane" is intended for one or more of the following waterproofing applications:

(i) Below-grade surfaces;

(ii) Between concrete slabs;

(iii) Inside tunnels;

(iv) Inside concrete planners; or

(v) Under flooring materials.

(c) "Waterproofing membrane" is applied in a single coat of at least 25 mils (at least 0.025 inch) dry film thickness.

(d) "Waterproofing membrane" does not include topcoats that are included in the concrete masonry sealer category.

(61) Wood Coatings.

(a) "Wood coatings" means coatings labeled and formulated for application to wood substrates only.

(b) "Wood coatings" includes the following clear and semitransparent coatings:

(i) Lacquers;

(ii) Varnishes;

(iii) Sanding sealers;

(iv) Penetrating oils;

(v) Clear stains;

(vi) Wood conditioners used as undercoats; and

(vii) Wood sealers used as topcoats.

(c) "Wood coatings" also includes the following opaque wood coatings:

(i) Opaque lacquers;

(ii) Opaque sanding sealers; and

(iii) Opaque lacquer undercoaters.

(d) "Wood coatings" does not include the following:

(i) Clear sealers that are labeled and formulated for use on concrete/masonry surfaces; or

(ii) Coatings intended for substrates other than wood.

(62) "Wood preservative" means a coating that:

(a) Is labeled and formulated to protect exposed wood from decay or insect attack; and

(b) Registered with both the U.S. EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. §136 et seq.) and with the State.

(63) Wood Substrate.

(a) "Wood substrate" means a substrate made of wood, particleboard, plywood, medium density fiberboard, rattan, wicker, bamboo, or composite products with exposed wood grain.

(b) "Wood substrate" does not include items comprised of simulated wood.

(64) "Zinc-rich primer" means a coating that:

(a) Contains at least 65 percent metallic zinc powder or zinc dust by weight of total solids; and

(b) Is formulated for application to metal substrates to provide a firm bond between the substrate and subsequent applications of coatings.

.04 General Requirements and Standards.

A. VOC Content Limits.

(1) Except as provided in this regulation, a person may not manufacture, blend, repackage for sale, supply, sell, offer for sale, or apply within the State an architectural coating with a VOC content in excess of the corresponding limit specified in Regulation .05 of this chapter.

(2) Limits are expressed as VOC content, thinned to the manufacturer's maximum thinning recommendation, excluding any colorant added to tint bases.

B. Most Restrictive VOC Limit. If anywhere on the container of an architectural coating, label or sticker affixed to the container, or in any sales, advertising, or technical literature supplied by a manufacturer or anyone acting on behalf of a manufacturer, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one of the coating categories listed in Regulation .05 of this chapter, then the most restrictive VOC content limit applies.

C. The provisions of §B of this regulation do not apply to the following coating categories:

(1) Aluminum roof coatings;

(2) Bituminous roof primers;

(3) High-temperature coatings;

(4) Industrial maintenance coatings;

(5) Low-solids coatings;

(6) Metallic pigmented coatings;

(7) Pretreatment wash primers;

(8) Shellacs;

(9) Specialty primers, sealers, and undercoaters;

(10) Wood coatings;

(11) Wood preservatives;

(12) Zinc-rich primers

(13) Calcimine recoaters;

(14) Impacted immersion coatings;

(15) Nuclear coatings;

(16) Thermoplastic rubber coatings and mastic; and

(17) Concrete surface retarders.

D. Sell-Through of Coatings.

(1) A coating manufactured before the effective date of January 1, 2017, that complied with the standards in effect at the time the coating was manufactured may be sold, supplied, or offered for sale until January 1, 2020.

(2) A coating that complies with the standards in effect in this State at the time of manufacture may be applied at any time.

(3) The provisions of this section do not apply to a coating that does not display a date or date code representing the date of manufacture.

(4) Notwithstanding §D(2), a person may not apply any rust preventative coating manufactured before January 1, 2017 for industrial use, unless such a rust preventative coating complies with the industrial maintenance coating limit specified in Regulation .05 of this chapter.

E. Painting Practices.

(1) All architectural coating containers used to apply the contents therein to a surface by pouring, siphoning, brushing, rolling, padding, ragging, or other means, shall be closed when not in use.

(2) Architectural coatings containers include, but are not limited to drums, buckets, cans, pails, trays, or other application containers.

(3) Containers of any VOC-containing materials used for thinning and cleanup shall also be closed when not in use.

F. Thinning. A person may not apply any architectural coating if the coating is thinned to exceed the applicable VOC limit specified in Table 1 of Regulation .05 of this chapter.

G. Coatings Not Listed in Regulation .05. A coating that does not meet the definitions for the specialty coatings categories listed in Regulation .05 of this chapter is subject to the VOC content limit for either a flat, non-flat, or non-flat high gloss coating based on its gloss as determined in Regulation .02B(2) of this chapter.

H. New Coatings Categories. Beginning May 1, 2016, the following new coatings categories shall be considered in compliance if the coating meets the applicable VOC limit specified in Table 1 of Regulation .05 of this chapter and the other provisions of this chapter:

(1)Aluminum roof coatings;

(2) Basement specialty coatings;

(3) Concrete/masonry sealers;

(4) Conjugated oil varnish;

(5) Driveway sealers;

(6) Reactive penetrating sealer;

(7)) Reactive penetrating carbonate stone sealers;

(8) Stone consolidant;

(9) Tub and tile refinishing coating;

(10) Waterproofing membranes;

(11) Wood coatings; and

(12) Zinc-rich primers.

.05 VOC Content Limits.

Table 1. VOC Content Limits for Architectural and Industrial Maintenance Coatings.

Coating Category	*VOC Content Limit (grams per liter)*
Flat coatings	*50*
Non-flat coatings	*100*
Non-flat – high gloss coatings	*150*
Specialty coatings:	
Aluminum roof coatings	*450*
Basement specialty coatings	*400*
Bituminous roof coatings	*270*
Bituminous roof primers	*350*
Bond breakers	*350*
Calcimine recoater	*475*
Concrete curing compounds	*350*
Concrete/masonry sealers	*100*
Concrete surface retarders	*780*
Conjugated oil varnish	*450*
Conversion varnish	*725*
Driveway sealers	*50*
Dry fog coatings	*150*
Faux finishing coatings	*350*
Fire-resistive coatings	*350*
Floor coatings	*100*
Form-release coatings	*250*
Graphic arts coatings (Sign paints)	*500*
High-temperature coatings	*420*
Impacted immersion coatings	*780*
Industrial maintenance coatings	*250*
Low-solids coatings	*120*
Magnesite cement coatings	*450*
Mastic texture coatings	*100*
Metallic pigmented coatings	*500*
Multi-color coatings	*250*
Nuclear coatings	*450*

Pre-treatment wash primers	*420*
Primers, sealers, and undercoaters	*100*
Reactive penetrating sealers	*350*
Reactive penetrating carbonate stone sealers	*500*
Recycled coatings	*250*
Roof coatings	*250*
Rust preventative coatings	*250*
Shellacs:	
Clear	*730*
Opaque	*550*
Specialty primers, sealers, and undercoaters	*100*
Stains	*250*
Stone consolidant	*450*
Swimming pool coatings	*340*
Thermoplastic rubber coatings and mastic	*550*
Traffic marking coatings	*100*
Tub and tile refinish coatings	*420*
Waterproofing membranes	*250*
Wood coatings	*275*
Wood preservatives	*350*
Zinc-rich primers	*340*

.06 Container Labeling Requirements.

A. A person who manufactures an architectural coating subject to this chapter shall display the information listed in this regulation on the coating container or container label in which the coating is sold or distributed.

B. Date Code.

(1) The date the coating was manufactured, or a date code representing the date of manufacture, shall be indicated on the label, lid, or bottom of the container.

(2) If the manufacturer uses a date code for a coating, the manufacturer shall file an explanation of each code with the Department.

C. Thinning Recommendations.

(1) A statement of the manufacturer's recommendation regarding thinning of the coating shall be indicated on the label or lid of the container.

(2) This requirement does not apply to the thinning of architectural coatings with water.

(3) If thinning of the coating before use is not necessary, the recommendation shall specify that the coating is to be applied without thinning.

D. VOC Content.

(1) A container of a coating subject to this chapter shall display one of the following values in grams of VOC per liter of coating:

(a) Maximum VOC content as determined from all potential product formulations;

(b) VOC content as determined from actual formulation data; or

(c) VOC content as determined using the procedures specified in Regulation .08 of this chapter.

(2) If the manufacturer does not recommend thinning, the container shall display the VOC content, as supplied.

(3) If the manufacturer recommends thinning, the container shall display the VOC content including the maximum amount of thinning solvent recommended by the manufacturer.

(4) If the coating is a multi-component product, the container shall display the VOC content as mixed or catalyzed.

(5) If the coating contains silanes, siloxanes, or other ingredient that generate ethanol or other VOCs during the curing process, the VOC content shall include the VOCs emitted during curing.

(6) The VOC content shall be determined using the procedures in Regulation .08 of this chapter.

E. Faux Finishing Coatings. The labels of all clear topcoat faux finishing coatings shall prominently display the statement "This product can only be sold or used as part of a Faux Finishing coating system."

F. Industrial Maintenance Coatings. A manufacturer of an industrial maintenance coating shall prominently display at least one of the following statements:

(1) "For industrial use only";

(2) "For professional use only";

(3) "Not for residential use"; or

(4) "Not intended for residential use".

G. Rust Preventive Coatings. The labels of a rust preventive coating shall prominently display the statement "For Metal Substrates Only".

H. Specialty Primers, Sealers, and Undercoaters. The label of a specialty primer, sealer, or undercoater shall, as applicable, prominently display one or more of the following descriptions:

(1) "For blocking stains";

(2) "For fire-damaged substrates";

(3) "For smoke-damaged substrates"; or

(4) "For water-damaged substrates";

I. Non-Flat—High-Gloss Coatings. The label of a non-flat—high-gloss coating shall prominently display the words "High Gloss".

J. Reactive Penetrating Sealers. The labels of all reactive penetrating sealers shall prominently display the statement "Reactive Penetrating Sealer".

K. Reactive Penetrating Carbonate Stone Sealers. The labels of all reactive penetrating carbonate stone sealers shall prominently display the statement "Reactive Penetrating Carbonate Stone Sealers".

L. Stone Consolidants. The labels of all stone consolidants shall prominently display the statement "Stone Consolidants – For Professional Use Only".

M. Wood Coatings. The labels of all wood coatings shall prominently display the statement "For Wood Substrates Only".

N. Zinc Rich Primers. The labels of all zinc rich primers shall prominently display one or more of the following statements:

(1) "For professional use only";

(2) "For industrial use only";

(3) "Not for residential use"; or

(4) "Not intended for residential use".

07. Reporting Requirements. *A person who manufactures a coating subject to this chapter shall provide within 180 days of written request, data concerning the distribution and sales of architectural coatings, including:*

A. The name and mailing address of the manufacturer;

B. The name, address, and telephone number of a contact person;

C. The name of the coating product as it appears on the label;

D. The application coating category;

E. A description whether the product is marketed for interior or exterior use or both;

F. The number of gallons sold in the State in containers greater than 1 liter and equal to or less than 1 liter;

G. The VOC actual content and VOC regulatory content in grams per liter.

(1) If thinning is recommended, list the VOC actual content and VOC regulatory content after maximum recommended thinning.

(2) If containers less than 1 liter have a different VOC content than containers greater than 1 liter, list separately.

(3) If the coating is a multi-component product, provide the VOC content as mixed or catalyzed.

H. The names and CAS numbers of the VOC constituents in the product;

I. The names and CAS numbers of any compounds in the product specifically exempted from the VOC definition under COMAR 26.11.01.01B(53);

J. A description whether the product is marketed as solventborne, waterborne, or 100 percent solids;

K. A description of resin or binder in the product;

L. A description whether the coating is a single-component or multi-component product;

M. The density of the product in pounds per gallon;

N. The percent by weight of solids, all volatile materials, water, and any compounds in the product specifically exempted from the VOC definition under COMAR 26.11.01.01B(53); and

O. The percent by volume of solids, water, and any compounds in the product specifically exempted from the VOC definition under COMAR 26.11.01.01B(53).

08. Compliance Procedures.

A. Calculation of VOC Content.

(1) For the purpose of determining compliance with the VOC content limits in Table 1 of Regulation .05 of this chapter, the VOC content of a coating shall be determined using the following procedures, as applicable:

(a) With the exception of low solids coatings, determine the VOC content (regulatory) in grams of VOC per liter of coating thinned to the manufacturer's maximum recommendation, excluding the volume of any water and exempt compounds using the following equation:

VOC Regulatory = (Ws - Ww - Wec) / (Vm - Vw - Vec)

Where:

VOC Regulatory = grams of VOC per liter of coating;
Ws = weight of volatiles, in grams;
Ww = weight of water, in grams;
Wec = weight of exempt compounds, in grams;
Vm = volume of coating, in liters;
Vw = volume of water, in liters; and
Vec = volume of exempt compounds, in liters.

(b) For low solids coatings, determine the VOC content (actual) in units of grams of VOC per liter of coating thinned to the manufacturer's maximum recommendation, including the volume of any water and exempt compounds using the following equation:

VOC Actual = (Ws - Ww - Wec) / (Vm)

Where:

VOC Actual = the VOC content of a low solids coating, in grams per liter of coating;
Ws = weight of volatile, in grams;
Ww = weight of water, in grams;
Wec = weight of exempt compounds, in grams; and
Vm = volume of coating, in liters.

(2) The VOC content of a tint base shall be determined without colorant that is added after the tint base is manufactured.

(3) If the manufacturer does not recommend thinning, the VOC content shall be calculated for the product as supplied.

(4) If the manufacturer recommends thinning, the VOC content shall be calculated including the maximum amount of thinning solvent recommended by manufacturer.

(5) If the coating is a multi-component product, the VOC content shall be calculated as mixed or catalyzed.

(6) If the coating contains silanes, siloxanes, or other ingredients that generate ethanol or other VOCs during the curing process, the VOC content shall include the VOCs emitted during curing.

B. VOC Content of Coatings.

(1) Except as provided in §C of this regulation, a person shall determine the VOC content of a coating using one of the test methods listed in Regulation .02 of this chapter, or an alternative method approved by the Department.

(2) If there are any inconsistencies between the results of EPA Method 24 test and any other means for determining VOC content, the EPA Method 24 test results will govern.

(3) The exempt compounds content shall be determined by one of the test methods listed in Regulation .02 of the chapter, as applicable.

C. Methacrylate Traffic Coating Markings. Analysis of methacrylate multicomponent coatings used as traffic marking coatings shall be conducted according to a modification of U.S. EPA Method 24 (40 CFR 59, subpart D, Appendix A). This method has not been approved for methacrylate multicomponent coatings used for other purposes than as traffic marking coatings or for other classes of multicomponent coatings.

Other State and Regional Standards

South Coast Air Quality Management District (SCAQMD)

SCAQMD is an air pollution control district in California that includes all of Orange County and parts of Los Angeles, Riverside, and San Bernardino counties. SCAQMD Rule 1113 limits the VOC content of architectural and industrial maintenance coatings. Adopted in 1977 and last amended in 2013, Rule 1113 is one of several regulations developed by the district that is designed to improve air quality by reducing VOC emissions. SCAQMD Rule 1113 stipulates that any person who supplies, sells, offers for sale, or manufactures any architectural coating for use in the SCAQMD must comply with the current VOC standards. The provisions and standards for architectural coatings in Rule 1113 are comparable to those found in the proposed regulation

Utah

R307-361 is based on Phase II of the OTC model rule for architectural coatings. The regulation establishes VOC content limits for several categories of architectural coatings that are

manufactured, offered for sale, supplied, or used within seven nonattainment counties (Box Elder, Cache, Davis, Salt Lake, Tooele, Utah, and Weber counties) in Utah. Counties outside of the nonattainment area are exempt from the requirements of the rule. In addition, the rule contains the following standards and provisions:

- An exemption for Department of Defense contractors who perform contractor work that explicitly mandates the use of military technical data specifications.

- A sell-through provision that clarifies coatings manufactured prior to the rule's effective date (January 1, 2015) may be sold up to three years after that date.

- Container labeling requirements for manufacturers of architectural coatings.

- Reporting and recordkeeping requirements pertaining to the sale of architectural coatings.

Because the Utah's architectural coatings rule is based on the OTC model rule (Phase II), the standards and requirements are comparable to those found in Maryland's proposed regulation.

California Air Resources Board (CARB)

CARB oversees 35 air pollution control districts in the state of California. The Board has developed several source-specific suggested control measures (SCM) such as those for architectural coatings. These SCMs serves as a model rule that can be used by districts throughout California, who are ultimately responsible for adopting, implementing, and enforcing architectural coating rules. CARB approved an SCM for architectural coatings in 1977 which established limits on the VOC content of specific architectural coatings. The limits established in the proposed SCM are based upon a detailed assessment various coating categories to determine the maximum emission reductions that are technically feasible and most cost-effective. The SCM has amended several times – first in 1985 and subsequently in 1989, 2000 and 2007. Some of the 35 individual air districts have adopted the SCMs for architectural coatings for their own rules based on their own air quality problems while others have remained under the EPA National AIM rule. Specifically, the 2007 SCM serves as the basis for the amended 2011 OTC model rule (Phase II) for architectural coatings, which the proposed regulation is based.

Ozone Transport Commission (OTC)

The OTC is a 13-state organization created under the Clean Air Act to develop and implement regional solutions to ozone problems in the Northeast. The membership includes the following states: Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont and Virginia.
Over the course of several years, a state-led workgroup developed two model rule (Phase I Model Rule - 2001 and a Phase II Model Rule – 2014) based upon SCMs developed by CARB that imposed VOC content limits, container labeling requirements, and other requirements on architectural coatings. Several states (including Maryland) have adopted the Phase I model rule standards (Vermont which still follows the EPA National Rule and only select counties in Virginia have adopted it). Several states are in the process of adopting or are evaluating the Phase II model rule standards.

Lake Michigan Air Directors Consortium (LADCO)

LADCO is an air quality consortium made up of states of Illinois, Indiana, Michigan and Wisconsin and Ohio that provides technical assistance to its member states on air quality related issues. Although has not developed any control measures or model rules pertaining to architectural coatings, Ohio, Illinois and Indiana have each adopted architectural coating regulations with VOC content limits and standards that are consistent with those found in the OTC Model Rule (Phase I). Michigan and Wisconsin continue to follow the EPA National Rule (40 CFR Part 59, Subpart D).

References

1. U.S. EPA – Technology Transfer Network – Air Toxics Web Site. Rule and Implementation Information for Architectural Coatings: http://www.epa.gov/ttn/atw/

2. "Staff Report for the Proposed Amendments to the Suggested Control Measure for Architectural Coatings", California Air Resources Board, September 2007.

3. Ozone Transport Commission. http://www.otcair.org

4. Utah Administrative Code, Rule R307-361 – "Architectural Coatings". http://www.rules.utah.gov/publicat/code/r307/r307-361.htm.

5. California Air Resources Board (CARB) – Architectural Coatings Program. http://www.arb.ca.gov/coatings/arch/arch.htm.

6. South Coast Air Quality Management District (SCAQMD) – Architectural Coatings. http://www.aqmd.gov/home/regulations/compliance/architectural-coatings.

7. Lake Michigan Air Directors Consortium (LADCO). http://www.ladco.org/.

APPENDIX A

Comparison between Existing and Proposed VOC Limits for Architectural and Industrial Maintenance Coatings

Product Category	Existing VOC Content Limit (g/L)	Proposed VOC Content Limit (g/L)
Flat coatings	100	50
Non-flat coatings	150	100
Non-flat – high gloss coatings	250	150
Aluminum roof coatings[1]	—	450
Antenna coatings[2]	530	—
Anti-fouling coatings[3]	400	—
Basement specialty coatings[4]	—	400
Bituminous roof coatings	300	270
Bituminous roof primers	350	350
Bond breakers	350	350
Calcimine recoater	475	475
Clear wood coatings[5]:		
Clear brushing lacquers	680	—
Lacquers, Including clear lacquer sanding sealers	550	—
Sanding sealers, excluding clear lacquer sanding sealers	350	—
Varnishes other than conversion varnishes	350	—
Concrete curing compounds	350	350
Concrete/masonry sealers[6]	—	100
Concrete surface retarders	780	780
Conjugated oil varnish[7]	—	450
Conversion varnish	725	725
Driveway sealers[8]	—	50
Dry fog coatings	400	150
Faux finishing coatings	350	350
Fire-resistive coatings	350	350
Fire-retardant coatings[9]:		
Clear	650	—
Opaque	350	—
Floor coatings	250	100
Flow coatings[10]	420	—
Form-release coatings	250	250
Graphic arts coatings (Sign paints)	500	500
High-temperature coatings	420	420

Product Category	Existing VOC Content Limit (g/L)	Proposed VOC Content Limit (g/L)
Impacted immersion coatings	780	780
Industrial maintenance coatings	340	250
Low-solids coatings	120	120
Magnesite cement coatings	450	450
Mastic texture coatings	300	100
Metallic pigmented coatings	500	500
Multi-color coatings	250	250
Nuclear coatings	450	450
Pre-treatment wash primers	420	420
Primers, sealers, and undercoaters	200	100
Quick-dry enamels[11]	250	—
Quick-dry primers, sealers, and undercoaters[12]	200	—
Reactive penetrating sealers[13]	—	350
Reactive penetrating carbonate stone sealers[14]	—	500
Recycled coatings	250	250
Roof coatings	250	250
Rust preventative coatings	400	250
Shellacs:		
Clear	730	730
Opaque	550	550
Specialty primers, sealers, and undercoaters	350	100
Stains	250	250
Stone consolidant[15]	—	450
Swimming pool coatings	340	340
Swimming pool repair and maintenance coatings[16]	340	—
Temperature-indicator safety coatings[17]	550	—
Thermoplastic rubber coatings and mastic	550	550
Traffic marking coatings	150	100
Tub and tile refinish coatings[18]	—	420
Waterproofing membranes[19]	—	250
Waterproofing sealers[20]	250	—
Waterproofing concrete/masonry sealers[20]	400	—
Wood coatings[21]	—	275
Wood preservatives	350	350
Zinc-rich primers[22]	—	340

Notes:
1. Aluminum roof coatings are a proposed new category that was formerly covered under metallic pigmented coatings.
2. The category for antenna coatings has been eliminated. Antenna coatings will be covered under the “industrial maintenance coatings” or “rust preventative coatings” categories upon the effective date of this rule.
3. The category for anti-fouling coatings has been eliminated. Anti-fouling coatings will be covered under the “industrial maintenance coatings” category upon the effective date of this rule.
4. Basement specialty coatings are a proposed new category that was formerly covered under waterproofing sealers and waterproofing concrete/masonry sealers.
5. The category for clear wood coatings has been eliminated. All coatings that fall under the category of clear wood coatings will be covered under the proposed category “wood coatings” upon the effective date of this rule.
6. Concrete/masonry sealers are a proposed new category that was formerly covered under waterproofing sealers, waterproofing concrete/masonry sealers, and other categories.
7. Conjugated oil varnish is a proposed new category that was formerly covered under varnishes.
8. Driveway sealers are a proposed new category that was formerly covered under waterproofing sealers and waterproofing concrete/masonry sealers.
9. The category for fire-retardant coatings has been eliminated. Fire-retardant coatings will now be covered under “fire-resistant coatings” or other applicable category upon the effective date of this rule.
10. The category for flow coatings has been eliminated. All coatings that fall under the category of flow coatings will be covered under the “industrial maintenance coatings” category upon the effective date of this rule.
11. The category for quick-dry enamels has been eliminated. All coatings that fall under the category of quick-dry enamels will be covered under the “non-flat – high gloss coatings” category upon the effective date of this rule.
12. The category for quick-dry primers, sealers, and undercoaters has been eliminated. All coatings that fall under the category of quick-dry primers, sealers, and undercoaters will be covered under the “primers, sealers, and undercoaters” and “specialty primers, sealers, and undercoaters” categories upon the effective date of this rule.
13. Reactive penetrating sealers are a proposed new category that was formerly covered under waterproofing sealers and waterproofing concrete/masonry sealers.
14. Reactive penetrating carbonate stone sealers are a proposed new category.
15. Stone Consolidant is a proposed new category that was formerly covered under waterproofing concrete/masonry sealers and other applicable categories.
16. The category for swimming pool repair and maintenance coatings has been eliminated. Swimming pool repair and maintenance coatings will be covered under the “swimming pool coatings” category upon the effective date of this rule.
17. The category for temperature-indicator safety coatings has been eliminated. Temperature-indicator safety coatings will now be covered under applicable categories upon the effective date of this rule.
18. Tub and tile refinish coatings are a proposed new category that was formerly covered under applicable categories.
19. Waterproofing membrane is a proposed new category that was formerly covered under waterproofing sealers and waterproofing concrete/masonry sealers.
20. The categories for waterproofing sealers and waterproofing concrete/masonry sealers have been eliminated. All coatings that fall under these categories will be covered under applicable categories upon the effective date of this rule.
21. Wood coatings are a proposed new category that was formerly covered under clear brushing lacquers, lacquers, sanding sealers, waterproofing sealers, varnishes, and other categories.
22. Zinc-rich primers are a proposed new category that was formerly covered under metallic pigmented coatings.

APPENDIX B

Comparison between EPA National Rule and Proposed Regulation

EPA National Rule Coating Category	EPA VOC Limit (g/L)	Corresponding Coating Category under Proposed Regulation	Proposed VOC Limit (g/L)
Antenna coatings	530	Industrial maintenance coatings Rust preventative coatings	250 250
Anti-fouling coatings	450	Industrial maintenance coatings	250
Anti-graffiti coatings	600	Industrial maintenance coatings	250
Bituminous coatings and mastics	500	Bituminous roof coatings Bituminous roof primers Concrete/masonry sealers Driveway Sealers Industrial maintenance coatings Waterproofing membranes	270 350 100 50 250 250
Bond breakers	600	Bond breakers	350
Calcimine recoaters	475	Calcimine recoaters	475
Chalkboard resurfacers	450	Industrial maintenance coatings	250
Concrete curing compounds	350	Concrete curing compounds	350
Concrete curing and sealing compounds	700	Concrete curing compounds Concrete/masonry sealers	350 100
Concrete protective coatings	400	Concrete/masonry sealers	100
Concrete curing compounds	350	Concrete curing compounds	350
Concrete surface retarders	780	Concrete surface retarders	780
Conversion varnish	725	Conversion varnish	725
Dry fog coatings	400	Dry fog coatings	150
Extreme high durability coatings	800	Industrial maintenance coatings	250
Faux finishing/glazing	700	Faux finishing coatings	350
Fire-retardant/resistive coatings:			
Clear	850	Fire-resistive coatings	350
Opaque	450	Fire-resistive coatings	350
Flat coatings:			
Exterior	250	Flat coatings	50
Interior	250	Flat coatings	50
Floor coatings	400	Floor coatings	100
Flow coatings	650	Industrial maintenance coatings	250
Form-Release Compounds	450	Form-release compounds	250
Graphic arts coatings (Sign paints)	500	Graphic arts coatings (Sign paints)	500
Heat reactive coatings	420	High-temperature coatings Industrial maintenance coatings	420 250
High-temperature coatings	650	High-temperature coatings	420
Impacted immersion coatings	780	Impacted immersion coatings	780
Industrial maintenance coatings	450	Industrial maintenance coatings	250
Lacquers (including lacquer sanding sealers)	680	Wood coatings	275
Magnesite cement coatings	600	Magnesite cement coatings	450
Mastic texture coatings	300	Mastic texture coatings	100

EPA National Rule Coating Category	EPA VOC Limit (g/L)	Corresponding Coating Category under Proposed Regulation	Proposed VOC Limit (g/L)
Metallic pigmented coatings	500	Metallic pigmented coatings Aluminum roof coatings Zinc-rich primers	500 450 340
Multi-colored preservatives	580	Multi-color coatings	250
Nonferrous ornamental metal lacquer and surface protectants	870	Rust preventative coatings Non-flat - high gloss coatings Primers, sealers, and undercoaters	250 150 100
Non-flat coatings:			
Exterior	380	Non-flat coatings	100
Interior	380	Non-flat coatings	100
Nuclear coatings	450	Nuclear coatings	450
Pretreatment wash primers	780	Pretreatment wash primers	420
Primers and undercoaters	350	Primers, sealers, and undercoaters Specialty primers, sealers, and undercoaters	100 100
Quick-dry coatings:			
Enamels	450	Non-flat - high gloss coatings	150
Primers, sealers, and undercoaters	450	Primers, sealers, and undercoaters Specialty primers, sealers, and undercoaters	100 100
Repair and maintenance Thermoplastic	650	Industrial maintenance coatings	250
Roof coatings	250	Roof coatings	250
Rust preventative coatings	400	Rust preventative coatings	250
Sanding sealers (other than lacquer sanding sealers)	550	Wood coatings	275
Sealers (including interior clear wood sealers)	400	Primers, sealers, and undercoaters Specialty primers, sealers, and undercoaters Concrete/masonry sealers Wood coatings	100 100 100 275
Shellacs:		Shellacs:	
Clear	730	Clear	730
Opaque	550	Opaque	550
Stains:			
Clear and semitransparent		Stains (Semitransparent) Wood coatings (Clear)	250 275
Opaque		Stains	250
Low solids		Low-solids coatings	120
Swimming pool coatings	600	Swimming pool coatings	340
Thermoplastic rubber coatings and mastics	550	Thermoplastic rubber coatings and mastics	550
Traffic marking coatings	150	Traffic marking coatings	100

EPA National Rule Coating Category	EPA VOC Limit (g/L)	Corresponding Coating Category under Proposed Regulation	Proposed VOC Limit (g/L)
Varnishes	450	Wood coatings	275
Waterproofing sealers and treatments	600	Concrete/masonry sealers Driveway sealers Wood coatings Waterproofing membranes Basement specialty coatings	100 50 275 250 400
Wood preservatives:			
Below ground wood preservatives	550	Wood preservatives	350
Clear and semitransparent	550	Wood preservatives	350
Opaque	350	Wood preservatives	350
Low solids	120	Low-solids coatings	120
Zone marking coatings	450	Traffic marking coatings	100