



TECHNICAL BULLETIN

VOC Considerations for Adhesives, Cements, Primers, and Coatings Used for Installation and Maintenance of Asphalt Roofing Systems

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While volatile organic compound (VOC) regulations have tightened over the years, there continue to be compliant adhesive, cement, primer, and coating options available for the installation and maintenance of asphalt roofing systems. Asphalt roofing systems—installed and maintained with VOC-compliant adhesives, cements, primers, and coatings—continue to provide long-term performance on the roof while achieving compliance with a wide variety of VOC regulations that exist throughout North America.

Background on VOC Regulations

When exposed to sunlight, nitrogen oxides (NO_x) and VOCs combine to produce ozone. The U.S. Environmental Protection Agency (EPA) has prescribed National Ambient Air Quality Standards (NAAQS) for ozone to protect the public health, with an adequate margin of safety, including the health of at-risk populations, and protect the public welfare from adverse effects. A region in which ground-level ozone is found to exceed the NAAQS is said to be in “nonattainment.” Once a state or region is found to be in nonattainment, that area is required to submit a State Implementation Plan (SIP) setting the regulatory actions that will be taken to come into attainment.

Those regions and states in nonattainment often employ VOC regulations as part of their air quality management program to achieve lower ground-level ozone concentrations. In several areas of the country where there is widespread nonattainment, such as California and the northeastern United States, regulatory bodies suggest model rules for governing VOCs. These model rules can be adopted locally by states and regional districts as part of their ozone-reduction programs. Additionally, the EPA has the authority to set VOC regulations for certain product types that become applicable across the country.

Primary Rules Affecting Roofing System Components

The main regulations affecting the installation and maintenance of asphalt roofing system components are the Architectural and Industrial Maintenance (AIM) Coatings Rules and the Adhesive & Sealants Rules. Although regulations affecting these products may be introduced anywhere in the US, there are geographic areas that have historically had high levels of VOC regulatory activity. Regulatory bodies for these areas include:

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- **California Air Resources Board (CARB):** CARB is the regulatory body that oversees California’s statewide air quality initiatives and guides the regulatory activities of its 35 local air districts. In the case of AIM Coatings, CARB publishes “suggested control measures” (SCMs) that the air districts may choose to adopt as part of their air quality compliance efforts.
- **Ozone Transport Commission (OTC):** Comprised of the northeast states that are included in the EPA-designated Ozone Transport Region (OTR), the OTC publishes Model Rules that participating states typically use as a template for their state or regional air quality regulations.
- **Lake Michigan Air Directors Consortium (LADCO):** LADCO encompasses the Great Lakes-area states. LADCO typically does not draft its own model rules, but recommends to its participating states that they use the OTC Model Rules.
- **South Coast Air Quality Management District (SCAQMD):** One of the air districts in California, the Los Angeles-area SCAQMD is typically at the forefront of creating and implementing new VOC regulations. The VOC content limits and breadth of VOC regulations in the SCAQMD far exceed those of anywhere else in the country; additionally, SCAQMD regulations typically serve as a precursor to future CARB SCMs and OTC Model Rules.

Complying with VOC Regulations

When a state or air district adopts a VOC rule, they have the choice to adopt a model rule as written, to make certain modifications to a model rule, or to create an entirely new rule. Therefore, it is essential that you work with the manufacturer of your asphalt roofing system components to ensure that the system being specified will comply with all federal, state, and local VOC regulations.

Adhesive, cement, primer, and coating manufacturers continue to make developments to their products to ensure the effectiveness and longevity of each roofing system installed using these components while also minimizing their potential impact on the environment. With ever-changing air quality regulations, adhesive, cement, primer, and coating manufacturers have many years of experience ensuring that products can comply with new regulations without sacrificing those products’ proven long-term performance in a broad range of climatic regions.

Contact an ARMA Member today to hear more on the latest VOC-compliant adhesive, cement, primer, and coating innovations available for your location. Refer to local jurisdictional codes, regulations, and specific project site requirements that may apply to roofing and related products.

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