

Unintended Consequences of Further VOC Reductions in Roof Coatings

Benefits of Roof Coatings

Roof coatings are applied to a variety of low slope roofs on residential, commercial, and industrial buildings to extend the life of a roof by preventing water, chemical, or physical damage which saves money for building owners. Certain roof coatings even provide an extra level of waterproofing protection to help shed water to keep building interiors dry. Also, roof coatings are the most effective and least costly option to help building owners save energy.



How Roof Coatings Prevent Tear-Off and Waste

Every building owner will eventually be faced with the decision to completely tear-off, reroof, or repair an existing roof. In fact, 2.5 billion square feet of roofs are either replaced or re-coated each year. Given that roofing materials are the third greatest contributor to waste in landfills¹, roof coatings are an ideal solution to extend the life of a roof and prevent tear-off and waste.

What is a VOC?

Found in a wide variety of products and in naturally occurring processes, volatile organic compounds (VOCs) are compounds of carbon that participate in atmospheric photochemical reactions.

VOCs are emitted from anthropogenic (man-made) sources such as motor vehicles, chemical manufacturing facilities, refineries, factories, and consumer and commercial products as well as biogenic (natural) sources which are primarily caused by trees and methane.

Why are VOCs in Roof Coatings Products?

In a liquid phase, VOCs help protect roof coatings during shipment by providing freeze thaw resistance. On the jobsite, VOCs help condition or soften the substrate and improve adhesion of the roof coating. Also, VOCs are integral to specific raw materials used in the roof coatings products.

How do VOCs Impact Ozone?

Ozone is formed when VOCs combine with nitrogen oxide (NOx) and sunlight. NOx is formed by combustion (automotive, factories, etc), biogenic sources (fertilizers, etc), and natural occurrences. Acceptable levels of ozone are regulated by the National Ambient Air Quality Standards (NAAQS) and specifically the National Ozone Standard. Regional areas where the air quality exceeds the NAAQS for ground level ozone are referred to as being in nonattainment.



¹ United States Environmental Protection Agency

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Over the last few decades, ninety percent of VOC content has been eliminated from roof coatings. The further reduction of VOCs can have a wide variety of unintended consequences such as:

- Hard settling, or phase separation of the components during transportation and storage of the product prior to application
- Poor adhesion of the product to the roof substrate
- The need for more coats of the product and heavier coverage rates, therefore increasing total VOC emittance
- Reduction of product lifespan, requiring more frequent applications
- Elimination of roof coating product lines that cannot be reformulated

Clean Air, Strong Economies Act

The Roof Coatings Manufacturers Association (RCMA) supports the Clean Air, Strong Economies Act which was introduced by U.S. Senator John Thune (R-SD) and U.S. Representative Pete Olson (R-TX) on March 17, 2015. Senate Bill 751 and House Bill 1388 prohibits the United States Environmental Protection Agency (EPA) from lowering the NAAQS until at least 85 percent of counties that are in nonattainment areas have attained the standard. In promulgating a primary or secondary NAAQS for ozone, the legislation states that the EPA must do the following:

- Only consider a county to be a nonattainment area on the basis of direct air quality monitoring (rather than modeling)
- Take into consideration feasibility and cost
- Include in the regulatory impact analysis for the proposed and final rule at least one analysis that does not include any calculation of benefits resulting from reducing emissions of any pollutant other than ozone

How You Can Help

RCMA is asking Congress to prevent the EPA from further lowering the National Ozone Standard which would increase VOC regulatory burdens and negatively affect the already heavily regulated roof coatings industry.