

How to Deal With Unpleasant Low-VOC Adhesive and Sealant Fumes

By David R. Hawn, FRCI, RRC, CEM

In late 2008 and early 2009, new regulations to reduce volatile organic compound (VOC) emissions were announced. The Ozone Transport Commission (OTC) declared it was requiring VOCs to be reduced in 13 states at that time. The industry pushed back, and a phase-in period was established in some of those states. In April 2009, an article by Rick Wagner was published in *Interface* using data from industry reports to inform RCI members about these upcoming requirements for 13 Mid-Atlantic and Northeastern states. That information was updated in the July 2009 *Interface* issue with a table courtesy of the EPDM Roofing Association (ERA).

Some jurisdictions were more aggressive than others concerning implementation. The phase-in periods are diminishing, with several jurisdictions requiring low-VOC products from May 1 to September 1 through 2011 but full-year implementations beginning in January 2012. Compliance with codes and regulations in regards to low-VOC cleaners, prim-

ers, adhesives, and sealants is not an option but a mandatory requirement. The experience-based information presented herein shall not be used as a substitute for complying with the codes and regulations regarding low-VOC materials. In fact, most area and regional suppliers will not provide anything but compliant materials as required. Still, by 2010, we found ourselves with more fume complaints than ever before.

We have discovered that the new low-

VOC cleaners, solvents, adhesives, and sealants, amazingly, smell even worse than their predecessors. In addition, the smell lingers longer. Thus, it has become much easier to empty out an office building or restaurant during a roof replacement or restoration/repair project. We needed a solution, and fast. During the early winter of 2010, some research by our firm yielded a potential solution. We found a carbon filter source on the Internet. Being a cigar connoisseur over 50, I recalled old cigarette advertisements touting the benefits of an activated charcoal filter and thought it might work. It was inexpensive and appeared to be easy to use and reuse. We informed our clients about what we were going to implement in an attempt to reduce their dependence on painkillers. During the course of 2011 (30+ projects), we did have some fume complaints but not when the carbon filter material was faithfully used. At some roofs, the complaints ceased once the filters were put into use.

We share this because it is significant and helps



Photo 1 – Intake covering in progress (photo by Dedicated Roof and Hydro-Solutions, LLC).

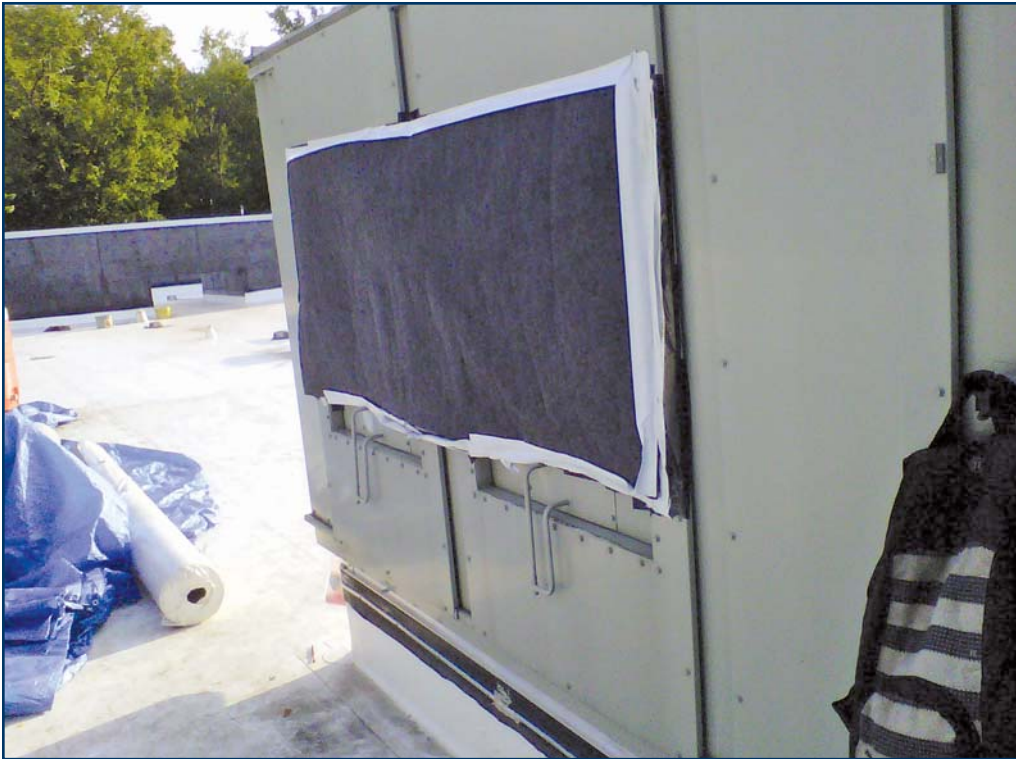


Photo 2 – Example of covered intake (photo by Dedicated Roof and Hydro-Solutions, LLC).

Photo 3 – Example of covered intake (photo by Dedicated Roof and Hydro-Solutions, LLC).

our industry with a new issue resulting from an otherwise good regulation imposed to improve our environment. I would not suggest this “trial and success” as an end-all solution. However, it worked well enough that the firm plans to continue to require the use of activated carbon filters at all air intakes during future roofing projects. Certainly, the trial was not highly scientific, but results could easily be detected, especially when corrective action ceased subsequent complaints.

WHAT WE REQUIRED

Products

- A. Air filters: Filter medium with activated charcoal such as CarbonWeb CW-90 by D-Mark (www.dmarkinc.com) or approved equal. (An Internet search will find comparable products from www.5starfilter.com and www.airfilterUSA.com as well as others.)

Execution

- A. When working with solvents, cleaners, or adhesives (high- or low-VOC) in the vicinity of air intakes, install filters over intake openings. Place two layers of filter material to completely cover opening and secure to mechanical unit or gravity ventilator.



VOC COMPLIANCE

Maine, Connecticut, Delaware, Maryland, New Jersey, New York, Pennsylvania, and Rhode Island required full compliance with new VOC regulations on January 1, 2012; and the District of Columbia was expected to have regulations in place by that date. Massachusetts, Vermont, and New Hampshire are still considering their approach to VOC regulation. Ongoing changes in regulations may be viewed at the EPDM Roofing Association’s (ERA) Web site, epdmroofs.org.

WHAT WE LEARNED

While the firm initially believed that only rooftop intakes at HVAC equipment would be an issue, we found that all openings except functioning exhaust fans would allow fume entry. To address that, we required that all potential intakes be wrapped with a double layer of the carbon/charcoal filter material as roof work was in progress on that specific roof section.


The roof contracting personnel required reminders to use the material. However, once they got in the habit, it not only seemed easy for them to do but also brought attention to other important opportunities to reduce fume problems. They became more aware and asked if the units could be shut down for the period when active cleaning or adhesive work would take place. Even with the units off, the intakes can draw air, and the filter placement remained important.

ADDITIONAL INFORMATION

The material is approximately 1/2-in. thick and can be doubled (or increased even

more) as required. Until it becomes clogged with airborne debris, it offers very little resistance to airflow, but it removes odors. It can be taped or tied in place and can be removed and reused on other sections of the same roof. If it is handled properly, it can be reused on other roofs. The material is lightweight and can easily be cut and folded or rerolled. A 50- to 65-ft. roll that is 30 in. wide costs approximately \$250. This is a

small price to pay to stop the phone calls concerning fume issues. I would not suggest this procedure will stop all fume complaints, but we found it substantially influenced the number of complaints with limited effort and cost.

This remedy only addresses fume issues related to the new low-VOC requirements, and special attention to other issues that may arise are not included. 

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